

Trends and Factors of Fertility in Canada

BY JACQUES HENRIPIN



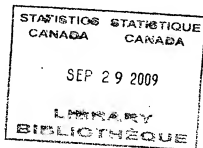
ISBN 0-88207-042-0
\$24.95 (HARDCOVER)





**TRENDS AND FACTORS
OF FERTILITY
IN CANADA**

by
Jacques Henripin



ONE OF A SERIES OF 1961 CENSUS MONOGRAPHS
prepared for the
CENSUS DIVISION

STATISTICS CANADA (DOMINION BUREAU OF STATISTICS)
OTTAWA, CANADA
1972

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The Minister of Industry, Trade and Commerce*

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Price: \$4.50

Catalogue No. CS 99-541/1972

Price subject to change without notice

Information Canada

Ottawa, 1972

Foreword

The Canadian censuses constitute a rich source of information about individuals and their families, extending over many years. The census data are used widely but it has proved to be worthwhile in Canada, as in some other countries, to supplement census statistical reports with analytical monographs on a number of selected topics. The 1931 Census was the basis of several valuable monographs but, for various reasons, it was impossible to follow this precedent with a similar programme until 1961. Moreover, the 1961 Census had two novel features. In the first place, it provided much new and more detailed data, particularly in such fields as income, internal migration and fertility, and secondly, the use of an electronic computer made possible a great variety of tabulations on which more penetrating analytical studies could be based.

The purpose of the 1961 Census Monograph Programme is to provide a broad analysis of social and economic phenomena in Canada. Although the monographs concentrate on the results of the 1961 Census, they are supplemented by data from previous censuses and by statistical material from other sources. In addition to *Trends and Factors of Fertility in Canada* and a Series of Labour Force Studies, monographs have been published on urban development, marketing, agriculture, income, immigration and internal migration.

I should like to express my appreciation to the universities that have made it possible for members of their staff to contribute to this Programme, to authors within Statistics Canada (Dominion Bureau of Statistics) who have put forth extra effort in preparing their studies, and to a number of other members of its staff who have given assistance. The Census Monograph Programme is considered desirable not only because the analysis by the authors throws light on particular topics but also because it provides insight into the adequacy of existing data and guidance in planning the content and tabulation programmes of future censuses. Valuable help in designing the Programme was received from a committee of Government officials and university professors. In addition, thanks are extended to the various readers, experts in their fields, whose comments were of considerable assistance to the authors.

Although the monographs have been prepared at the request of and published by Statistics Canada (Dominion Bureau of Statistics), responsibility for the analyses and conclusions is that of the individual authors.

Walter E. Buffett
CHIEF STATISTICIAN OF CANADA.

Preface

Statistics Canada (Dominion Bureau of Statistics) should be commended for reintroducing the Census monographs on the occasion of the 1961 Census. That is without any doubt the best way to ensure that certain basic phenomena are studied, with the help of a considerable amount of highly valuable data of which not much use would otherwise be made. Statistics Canada (Dominion Bureau of Statistics) liberally assisted the authors by preparing special tabulations, by offering them the help of skilled research assistants and by putting at their disposal technical services of remarkable efficiency. Another factor worth mentioning is the flexibility with which this help was given, thanks to the men primarily responsible for the monograph programme, Dr. Simon Goldberg, Assistant Chief Statistician, and Dr. Karol Krótki, who was at the time Assistant Director of Research, Census Division.

When I started my work, I was greatly helped by the advice of a demographer of valuable experience and great imagination. It is indeed with deep emotion that I give expression here to the friendship and gratitude that I feel for my late colleague, Miss Yoshiko Kasahara.

Four persons have been associated with my work on a more or less permanent basis. Mrs. Sylvia Wargon prepared with the utmost care and patience the tabulations and the calculations required in the analysis of historical trends of fertility, to which work Mlle Antoinette Demers also contributed. Mrs. Wargon also collected with great difficulty the data required to evaluate the errors in the sampling of a group of women to whom were asked questions on fertility. M. Michel Vézina provided very efficient assistance in the processing of complex data on which were based certain parts of Chapters 6 to 10. The fourth person, M. Jean-Charles Desjardins, was more than a research assistant: his devotion, his initiative and his remarkable talent for organization made him a sort of scientific impresario who spared the author many concerns and many visits to various technical or administrative services. He succeeded both in speeding up the work and in doing a lot for my peace of mind. At a later stage, he also accepted the responsibility for preparing the translation of the original French version to English.

It would be impossible to mention here all the people whose help made this work possible. However, I wish to draw attention to the great competence of the programmer, Mr. H.R. Ferguson, to the expert vigilance of Mme Valéda Mercier and of Mme Jacqueline Larose who reviewed the

manuscript, and to the skill and celerity of the draftsmen who worked under the direction of M. Laurent Tessier. The excellent work done by the Comptometer Pool headed by Mrs. Muriel Ellis should also be noted. It is under the direction of M. Edgar Marengère that the final text was prepared for printing.

Finally, I wish to express all my gratitude to two eminent demographers, M. Louis Henry and Mr. Nathan Keyfitz, who have been good enough to read this study and comment upon it. Thanks to them, a few errors, some important, have been corrected and some interpretations rectified or completed. Needless to say the responsibility for any errors and for the implications of some evaluations rests solely with the author.

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Université de Montréal

MARCH 1970

NOTE ON THE TRANSLATION

Because this monograph is deeply concerned with a subject of interest to many, and in order to make it accessible to as extended a reading public as possible, it was decided to translate the French version. This was not without presenting some difficulties, since such an endeavour required not only a familiarity with the English language, but also a basic knowledge of demographic terminology. A first attempt having proven unsuccessful, I was approached by the author with whom I had worked in close association during the initial project.

I beg the indulgence of the reader for the time that has elapsed, as well as for any unorthodox affront made to Fowler's English grammar. The author had, in his original version, produced a simple and clear presentation: my main preoccupation in the transposition to English was to retain the simplicity and clarity of the original text, even sometimes at the expense of twisting the English language.

In view of the foregoing, I accept the full responsibility for any errors or deficiencies in the interpretation of the author's analysis.

MARCH 1970

Jean-Charles Desjardins

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Introduction

It is but a short time since human societies have sought to violate nature in handing on human life, to borrow an expression from Moheau. Even though diverse birth control methods may have been public knowledge for a very long time, the use of such methods has always been limited to restricted categories within human societies. Obviously, the fertility of human populations has long been indirectly governed by social custom bearing on age at marriage, pre-nuptial chastity, remarriage and diverse sexual prohibitions, but it was only at the end of the eighteenth century that the birth rate of an entire population (the French) dropped because couples voluntarily limited the size of their family. In this field, France preceded all other countries by about a hundred years. Indeed, and disregarding the United States for the time being, because of the lack of adequate information in this respect about US couples in the course of the first half of the nineteenth century, it was only around 1870 that other western European countries also embarked upon the course of voluntary birth control. It would seem, as will be seen in this study, that Canadian couples began to reduce the number of their descendants at about the same time.

Therefore, it has only been for about one hundred years that legitimate fertility, that is to say the descendance of couples, has been subject to the effects of voluntary and direct intervention on the latter's part amongst most populations of western European origin. This phenomenon was the first phase in what has been called a demographic revolution or transition. This phase is not yet over since fertility is far from being completely controlled as yet; however, the progress in voluntary infertility has been sufficient to bring about profound social changes in the course of the last few decades in the manner in which men and women transmit life.

Progressive control of fertility has brought couples in the so-called developed societies to reduce their descendance by about 50 to 70%. This simple fact is almost the sole root-cause of another demographic phenomenon that has brought about profound changes in the fabric of society: the ageing of populations. Amongst those affected by the decline in fertility, the relative importance of the young has markedly decreased, that of adults has slightly increased and the relative weight of aged persons has multiplied three, four or five times. We shall not discuss here all the economic, political, sociological or psychological consequences of such a change. We might, however, point out the more readily discernible economic consequences: (1) the cost of social security systems is markedly affected; (2) it is more difficult to adjust the active population to the needs of the

economy due to two factors: the labour force contains a higher proportion of older workers and a relatively smaller number of new workers — always the more readily directed to jobs; (3) the decrease in the number of children has enabled married women to work outside their homes earlier because they have not had to devote so many years to the raising of small children. This phenomenon is one whose consequences upon patterns of conjugal and family life have not all become apparent as yet; (4) the average age of electoral bodies has increased as has the average age of those holding power and private wealth; (5) finally, a number of major social needs such as hospitals, schools and housing facilities, are subject to basic variations due to change in the age composition of the population, change in the rates of population growth, in both cases, the direct resultants of a secular decline in fertility.

These are only some of the permanent effects of a change in the birth rate. Bringing procreation under the decision-making power of parents leads to a further consequence of major import. The birth rate will become subject to long- and short-term fluctuations, dependent upon the way in which couples react to certain constraints, to certain stimulants that are as yet not fully understood. It is already a well-established fact that the birth rate is extremely sensitive to prevalent economic conditions. Other factors are of some importance, but as yet it has been difficult to establish the effect of these factors. Mass psychology phenomena have neither been assessed or analysed in any comprehensive manner as yet; these phenomena do govern changes in behaviour patterns and in value systems. These behaviour patterns and value systems exercise a marked effect on the number of children born to any given couple. There are two component elements in these fluctuations: from one generation to another, the number of children desired changes and this is a factor we must take into account; and secondly, the timing of births has become a matter of decision for each couple concerned and is a factor quite apart from the number of births sought. The result is that certain periods are favourable to a high birth rate as was the case in North America during the fifteen years following the Second World War. Depressions and wars induce couples to defer the procreation of children. The ensuing fluctuations affect changes in the volume of the labour force, demand for consumer goods and investments of all kinds: industrial equipment, housing, teacher training, etc. . . .

There is yet another aspect of fertility that has been examined and led to somewhat pessimistic conclusions bearing on the present and future developments in the average intelligence of a population. The type of threat, that some authors have claimed hangs over the future intelligence of populations, is based on the facts enumerated below. All social classes of Malthusian populations are far from having the same fertility rate: to take

but one example from the Canadian picture, women with university training only bear about half the number of children borne by women who have not been educated beyond the elementary school level. Many intelligence tests have demonstrated that, *on the average*, the I.Q. of the underprivileged classes (the most fertile) is markedly lower than the I.Q. of privileged classes. The criticism that may be formulated about the tests used does not mean that the tests are completely valueless as gauges for the mensuration of innate intellectual aptitudes, even though environment may have an appreciable effect on the intellectual capacity of the children tested. Supposing that intellectual aptitudes be determined in part at least by hereditary mechanisms, the conclusion follows therefrom that some segments of the population, on the average, may transmit the weaker intellectual powers and, at the same time, reproduce themselves more rapidly than those sectors of the population which, still on the average, can transmit the most sought-after intellectual aptitudes. If we accept all these elements in the argument, we may only draw the following conclusion: that the fraction of the population which comprises individuals with the desired intellectual aptitudes is being constantly reduced from generation to generation.

It has not been possible as yet to determine, *a posteriori*, the results of a process of this nature. Certain arguments have been brought forward to diminish its scope. First of all, the hereditary transmission of intellectual aptitudes would seem to be exceedingly complex, and the very complexity of this process would require quite a considerable time lapse before any effects would become really noticeable. Secondly, it is quite clear that one of the elements essential to this theory is the inverse relationship between fertility and the probability of being the bearer of favourable and transmittable intellectual aptitudes. Now, it is not at all certain that this inverse relationship will persist. It should also be pointed out that this relationship has only been an observed factor for a limited number of years: three or four successive generations or, roughly, a hundred years. For the past few years already, there has been a quite remarkable convergence between fertility levels from one social class to another, however social classes be defined. Indeed, this is one of the major conclusions to be drawn from this study. Should this convergence persist, we shall quite rapidly reach a point where one of the conditions essential to this progressive erosion of intellectual aptitudes shall cease to exist.

There are reassuring prospects that should not be overlooked either. There might be a change in the inverse relation between fertility and social status. The inverse relation, which persists, in a marked manner, seems linked with educational levels and not with income levels as might have been concluded from Chapters 8 and 9. What is the significance of this

ratio? Is it not that the less well-educated couples have been quite unaware they might develop a rational approach to life, or have been totally ignorant of effective birth control methods? As education becomes more widespread, so equally does a more rational approach to life. Probably, very few couples will not seek to adjust their family responsibilities to their own economic resources. Furthermore, the development of more effective contraceptive agents, agents easy to use, will soon mean that almost all couples will be able to effect this adjustment themselves. Should this type of rational behaviour be adopted about equally by all social classes and if these classes are not differentiated to a marked degree by an unequal propensity in childbearing, couples will have more children as their revenue increases, a trend which has already become evident. We cannot be sure at all that the possibilities we have outlined shall become realities, but it is not unlikely. We should then find a positive relation between high educational and income levels on the one hand, and a high fertility rate on the other. It would then be the parents likely to transmit to their children a heredity gifted with intelligence who would bear the highest number of children, unless the role played by legitimate fertility were wiped out by marriage patterns exercising an adverse effect.

In Canada, an examination of the possible consequences of variations in fertility should not overlook one of the most important aspects of the political life of this country: the competition between the language groups. While this competition is keenly felt in many fields, everyone will admit that one of the most important of those in which it is felt is the demographic race. Over the last three quarters of a century, the equilibrium has remained quite stable: virtually all the immigration has added to the numbers of the English-speaking group, but this influx to the Anglo-Canadian stream was compensated by the excess fertility of the French-speaking people. Over the past forty years, however, this excess fertility has been reduced which will probably mean that the fertility of the French group will no longer add sufficient numbers to the French stream to compensate for the influx of immigrants to the English group, more particularly in view of the fact that an increasingly large number of Canadians of French origin are adopting English as their tongue, particularly outside of Québec. Thus, fertility becomes a matter for consideration by politicians and may one day come under the aegis of the public authorities.

In future, it may well be that state intervention in regards to the birth rate will be justified on other grounds as well. The temptation might be to either reduce or increase the rate, for economic reasons. An attempt might equally be made to bring fluctuations in the birth rate under some control, because these fluctuations affect a number of major economic phenomena.

Given these conditions, fertility becomes an important factor in social development and at least the four following aspects should be ascertained as precisely as possible: (1) Mensuration of past changes in fertility, together with an exact interpretation of the trends found; (2) evaluation of the factors related to these variations and to the differences in behaviour found between one segment of the population and another; (3) the future forecasts for the birth rate; (4) the social consequences of these past and future variations. The present study is directed almost exclusively to the first two of these points and is based on the censuses and vital statistics for Canada.

The first four chapters are about historical trends in Canadian fertility. There is information available permitting examination of the subject right back to the earliest settlement of this country by Europeans. Examination of parish records has permitted the establishment of statistics for population movement for the whole period of the French Régime (1608 to 1760); and, in the case of Québec Catholics, this analysis can be traced back to 1880. The results will be found in Chapter 1, as will a more thorough analysis of some aspects of fertility for the seventeenth and eighteenth centuries. In Chapter 2, we attempted to make the best use of Canadian census information and vital statistics to indicate the evolution in the fertility pattern for Canada as a whole, and for certain provinces, over the eighteenth and nineteenth centuries. On the basis of certain hypotheses and estimates that are not always absolutely reliable, the birth rate, the fertility of all women and the fertility of married women have been estimated. Variations in the fertility of all women from 15 to 50 years may be imputed to four demographic factors: age distribution, nuptiality, legitimate fertility, and illegitimate fertility. Chapter 3 is devoted to examining the extent of the respective influence of these four factors, either on variations in the fertility rate over the course of time, or on the differences between each province and Canada, at certain times. Chapter 4 deals with differences in fertility by type of residence. The evolution of these differences will be assessed first of all and an attempt will then be made to evaluate the effect of residence on fertility while keeping constant certain other factors that usually vary with residence.

In the case of a population for which almost all births are legitimate, marriage is, to all practical ends and purposes, one of the determinants of fertility. In Chapter 5, the evolution of fertility in its relationship to the duration of marriage will be examined, as will the variation in the completed fertility of couples in relation to the age of the woman at the time of her first marriage.

Chapter 6 examines the differences in fertility that are linked with four factors bearing some relationship to one another: country of birth,

ethnic origin, mother tongue and religion. When the last two factors are studied, an attempt will be made to measure the differences in fertility that can be imputed either to the fact that French or English is the mother tongue, or that adherence be to the Roman Catholic or to the Protestant religion, a certain number of other factors remaining constant.

Each of the four subsequent chapters examines fertility variations in relation to certain phenomena that have long been related to variations in procreation: the husband's occupation, the level of schooling (either of the husband or wife), the income (either of the husband or of the family) and the labour force status of the woman. In each case, in so far as available information permits, we shall attempt to measure the influence exercised by the factor examined, and to set aside the influence of characteristics that are linked with it. Thus, we find that income, for instance, is far from having the depressive effect usually attributed to it, and now tends to be positively linked with fertility and indeed to encourage fertility.

In Chapter 11, we examine three more particular aspects of fertility: birth intervals, evolution of fertility rates by birth order and finally the evolution of illegitimate fertility, by age of women, since 1921.

An important part of this study is based on information from a sample of 20% of the women who, at the time of the 1961 Census, were or had already been married. In Appendix I, are to be found some observations on the value of this sample.

We are far from having used all the information that might have been used. We have had to make choices, and this has not always been easy; in many instances, we have not taken data by province into account. On the other hand, it goes without saying that the factors taken into consideration have been linked with those for which the diverse censuses provide information. Probably they are not the factors that are the most closely knit in with the behaviour of couples, in determining their descendants. This type of study permits a description of the way in which diverse elements in the population contribute to the replacement of generations; it may contribute to predicting the future development of fertility. But analyses based on this type of information should not be expected to contribute significantly to an understanding of the psycho-sociological phenomena that determine the behaviour of couples, inasmuch as the behaviour of couples is not a mere accident of nature.

Chapter 1

BRIEF DEMOGRAPHIC HISTORY OF NEW FRANCE (1608-1760) AND OF THE CATHOLIC POPULATION OF QUÉBEC FROM 1760 TO 1880

At the end of the 150 years comprising the lifetime of the French colony in Canada, the population of French origin had probably reached the figure of 73,000 inhabitants. This is about the total of populations in New France (63,000 inhabitants¹) and Acadians (10,000 inhabitants) at the time of the Conquest in 1760. Acadia had been ceded to Great Britain some forty-seven years earlier. This is a very low figure when compared with the population for New England, which must have been around a million and a half, at that time. Colonization had begun about the same time. The ratio between the two populations, in 1760, was twenty to one and due to a very simple cause . . . "quelques bateaux de plus . . . quittaient tous les ans la petite Angleterre"².

Indeed, the immigration of French settlers had been most sparse. It is estimated that about 10,000 people left France to come to settle in Canada, between 1608 and 1760 — that is not 70 persons in a year! This parsimoniousness was due, in measure, to the mercantile principles which governed French policy at the time: the colony was to be peopled, but not at the expense of France proper. A high number of births amongst settlers and their descendants was relied upon to supply the required manpower. In so far as the birth rate is concerned, the Canadians of those days cannot be reproached for not having done their duty.

¹Certain authors estimate the population of New France at 70,000 inhabitants for this period.

²A. Sauvy, in the preface of Marcel R. Reinhard, *Histoire de la population mondiale de 1700 à 1948*, Paris, Domat-Montchrestien, 1949.

We have excellent information on the movement of the population of Canada at that time (that is to say on births, marriages, deaths) thanks to the work of the Abbé Cyprien Tanguay, who devoted several years of his life, in the second half of the nineteenth century, to examining the records of baptisms, marriages and burials of the Catholic population of Québec. Since virtually the whole population of New France was Catholic and the events with which we are concerned gave rise, in the vast majority of cases, to Church documents, we can establish, with some exactitude, the number of births, marriages and deaths.³ It was not statistics on population movement which interested the Abbé Tanguay, but the genealogy of families of French origin.⁴ However, the events of which Tanguay took note have been used in compilations of statistics published, in different forms, in Volume V of the 1871 Canadian Census (for the period 1608-1875) and in Volume IV of the 1881 Census (for the period 1876-1880).

We are much less well informed on the evolution of the population, particularly in regard to the fifty odd years preceding the first census in February-March 1666. The estimates made lead us to believe, nonetheless, that peopling was very slow in its beginnings. In 1641, that is to say thirty-three years after Champlain and his twenty-eight companions reached Québec, there were only 240 inhabitants in New France; twelve years later, the population was estimated at 2,000; the 1666 Census enumerates 3,215 inhabitants. This is at the height of the heaviest immigration the colony ever underwent. It is estimated that between 1663 and 1671, 2,500 settlers left France to settle in Canada, that is twice the number who had immigrated prior to 1663. The population in 1673 is estimated at 6,705, at 9,719 in 1680 and 13,815 (without counting Indians) by 1698. The figure must have been 15,000 in 1702; 25,000 in 1721; 50,000 in 1748. The figure of 63,000 was reached at the time of the Conquest.

It was only about 1675 that the growth of this population became regular. Rates calculated for earlier periods may be erroneous because the population grew by fits and starts. It was only from about 1700 onwards that the age and sex structure of this population became normal. Prior to that date, there was an abnormal proportion of young adults of the male sex and a good many of these young men remained bachelors, for want of a partner. From 1680 to 1760 the population of New France, on the average, doubled once in thirty years and is pretty close to the growth rates put

³A critical study of these documents indicates that they were relatively complete. See J. Henripin, *La population canadienne au début du XVIII^e siècle*, Paris, P.U.F., 1954, pp. 26-32.

⁴These genealogies were published in his *Dictionnaire généalogique des familles canadiennes*, 7 volumes, Montréal, E. Senécal, 1871 to 1890.

forward by Malthus in his famous book. What is interesting to note is that in the first decades immediately following the conquest of Canada by England, the Canadians of French origin did achieve the growth rate forecast by Malthus, namely doubling their number once in 25 years. Since there was virtually no French immigration during this time, this growth is certainly natural growth.⁵ In Graph 1.1, a curve represents the evolution of the French Canadian population (or Catholic population) between 1681 and 1760. After 1760, this curve represents the Catholic population of Québec.

On the same graph (for which the vertical scale is logarithmic), we have shown the annual average number of births, marriages and deaths for Catholics in the province of Québec. What is to be noted particularly in this graph is, on the one hand, the constancy in the slope of curves (excepting for deaths) and the strikingly parallel character of curves representing population, births and marriages, between 1700 and 1840. The natural conclusion is that throughout this period the birth and marriage rates were pretty well at a constant level, and this can be checked later in the calculation of these rates. The number of births per marriage also seems to have remained at the same level. In any given year, there were about six times as many births as marriages. But this figure does not represent the number of children born within a marriage, for account must be taken of a chronological gap between a marriage and the births within that marriage. This gap is about seven years and this means about 6.7 births per marriage. This figure accounts for the decease of one or the other of the spouses before the wife had reached the age of fifty; it accounts for second marriages which are later and in which the number of descendants is reduced.

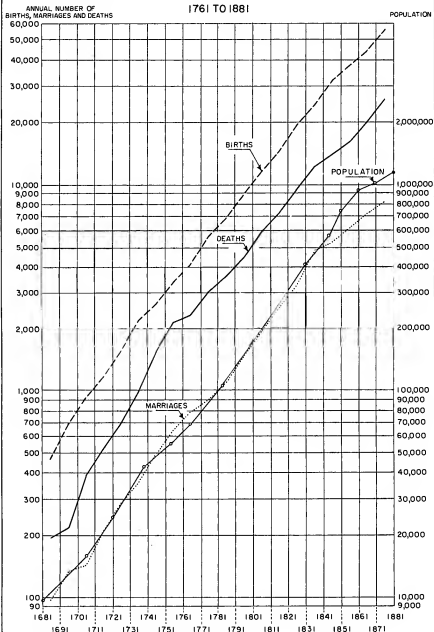
It is perhaps easier to examine the evolution of this population movement, working on the basis of rates. Calculation of rates brings that population into the picture in regard to which evaluations are more unreliable than information about births, marriages and deaths. With the help of available information, we have estimated the population figure for the middle of each decade for the period 1681-1880. The figures appear in the first column of Table 1.1. In this table, for each decade, will be found the average annual number of births, marriages and deaths as will the rates for these events. The rates appear in Graph 1.2.

The marriage rate remained about constant until 1820 and was in the neighbourhood of 10 per 1,000 inhabitants. The rate was particularly high between 1750 and 1770 (11.3 per 1,000). There was a slight tendency

⁵This would seem to have also been the case for the US population about the same period. See W.H. Grabill, C.V. Kiser and P.K. Whelpton, *The Fertility of American Women*, New York, John Wiley and Sons, 1958, pp. 5-7.

GRAPH 1.1

POPULATION AND AVERAGE ANNUAL NUMBER OF BIRTHS, MARRIAGES, AND DEATHS,
NEW FRANCE, 1681 TO 1760 AND CATHOLIC POPULATION OF QUÉBEC,
1761 TO 1881



Sources: Table 1.1 and Censuses of 1871 and 1881.

Table 1.1 – Population, average annual number of births, marriages and deaths, birth, marriage and death rates (per 1,000 inhabitants), New France, 1681 to 1760 and Catholics of the Province of Québec, 1761 to 1880

Period	Population at mid-period ^a	Average annual number of			Rate per 1,000 inhabitants		
		Marriages ^b	Births ^b	Deaths ^b	Marriage	Birth	Death
1681-90	10,700	98	463	196	9.2	43.3	18.4
1691-1700	12,900	135	689	221	10.5	53.4	17.2
1701-10	16,100	146	931	390	9.1	57.8	24.2
1711-20	20,800	213	1,195	522	10.2	57.5	25.1
1721-30	28,500	290	1,572	691	10.2	55.2	24.2
1731-40	39,000	367	2,208	1,000	9.4	56.6	25.6
1741-50	47,500	496	2,655	1,528	10.4	55.9	32.2
1751-60	57,000	643	3,397	2,176	11.3	59.6	38.2
1761-70	70,000	792	4,561	2,366	11.3	65.2	33.8
1771-80	87,000	899	5,646	3,016	10.3	64.9	34.7
1781-90	110,000	1,093	6,832	3,562	9.9	62.1	32.4
1791-1800	147,000	1,501	8,975	4,338	10.2	61.1	29.5
1801-10	197,000	1,909	11,507	5,914	9.7	58.4	30.0
1811-20	261,000	2,523	14,611	7,180	9.7	56.0	27.5
1821-30	350,000	3,244	19,618	9,494	9.3	56.0	27.1
1831-40	460,000	4,807	24,818	12,549	8.9	54.0	27.3
1841-50	600,000	5,282	31,792	14,257	8.8	53.0	23.8
1851-60	830,000	6,135	37,974	16,307	7.4	45.8	19.6
1861-70	980,000	7,188	44,056	20,595	7.3	45.0	21.0
1871-80	1,080,000	8,379	50,268	26,606	7.8	46.5	24.6

^a Estimates based on census.

SOURCE: Canadian censuses of 1871 and 1881.

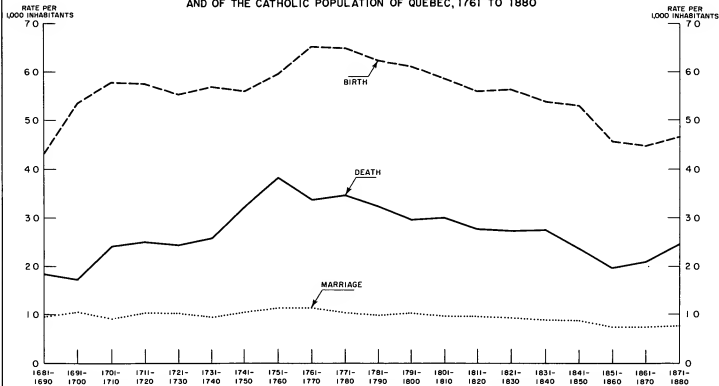
^b 1681-1875 – *Census of Canada, 1871*, Vol. V, p. 163; 1876-1880 – *Census of Canada, 1881*, Vol. IV, p. 144.

towards a drop between 1800 and 1830 and after this date, the drop becomes more marked. The rate for the three last periods was lower than 8 per 1,000. These movements correspond to changes in farm life conditions.

The birth rate fluctuates even more, but on the whole, follows pretty well the marriage pattern. The rate is relatively low for the first decade (43.3 per 1,000); from 1691 to 1750, it runs between 53.4 and 57.8 per 1,000. During the next decade (1751-1760) despite the warfare that marked the first part, the rate reached 59.6. There was a concurrent rise in the marriage rate and the two phenomena were perhaps due to heavy immigration. After hostilities ended, the birth rate reached a record peak: 65 per 1,000. The rate stayed at this level for twenty years (1761-1780). A fairly regular decline was then observed: after 1801, the birth rate fell below 60

GRAPH 1.2

BIRTH, MARRIAGE, AND DEATH RATES OF THE POPULATION OF NEW FRANCE, 1681 TO 1760
AND OF THE CATHOLIC POPULATION OF QUÉBEC, 1761 TO 1880



Source: Table 1.1

per 1,000 and declined to 53 per 1,000 in 1841-1850. There was then a quite abrupt drop and from 1851 to 1880, the rate was about 45 per 1,000. The last level was never to be reached again in after years: our estimates indicate a rate of 42.6 per 1,000 in 1881-1890 and 40 to 41 per 1,000 from 1891 to 1920.

How do we explain this pattern? We shall examine the fertility of couples formed between 1700 and 1730, who gave birth to their children between 1700 and 1750. This fertility which is very high indeed, corresponds to a 56.5 per 1,000 birth rate. Why did the birth rate stand at a markedly higher level over the course of the next fifty years? Perhaps the heavy marriage rate between 1751 and 1770 was partly the reason. Moreover the question might be put: has the population (the denominator for the rates) been under-evaluated? If so, this would affect the marriage rate and such was not the case. The conclusion is that couples were more fertile in the last half of the eighteenth century than they had been in the first. Between 1811 and 1830, the birth rate swung back to what it had been in the early eighteenth century. The subsequent decrease must have been due to a decrease in the marriage rate and to emigration towards the United States, which began about this period.

The crude death rate varied even more. At least a part of the increase noted between 1691 and 1760 must have been due to ageing of the population.⁶ Wars and difficulties attendant upon wars probably exercised some effect, between 1741 and 1760. After the Conquest, the rate remained at 34 per 1,000 for about twenty years, but progressively dropped to a 20 per 1,000 rate in 1851-1860.

Between 1691 and 1850, the rate of natural increase was 3% if we except the period 1741-1760. With a rate like this, a population doubles its numbers every twenty-three years. This is just about what happened to the French Canadians during certain periods and particularly from 1760 to 1830.

FERTILITY IN THE SEVENTEENTH AND EIGHTEENTH CENTURIES

Although exceptionally high, there was nothing miraculous about the high birth rate in the seventeenth and eighteenth centuries. It was due to early marriages (this was general) and to a high fertility amongst couples. Illegitimate births only played a very minor role. According to the findings of Tanguay,⁷ the proportion of illegitimate births rose from 0.2% in 1700 to

⁶Due to the wave of emigration at the end of the seventeenth century, the population must have been abnormally young up to 1730.

⁷Refer to the end of Tome IV of his *Dictionnaire généalogique*.

1.2% for the period 1741-1760. But the latter figure was exceptional for the period and due to the particular circumstances which preceded the cession of Canada to England. After 1760, the proportion dropped back to 0.6% and it was only from 1850 onwards that the rate climbed to 1%. On the other hand, pre-nuptial conceptions were not unusual: in the case of marriages celebrated between 1700 and 1730, 4.5% of the first live births were during the first five months immediately following the marriage.⁸ This is certainly an underassessment of pre-nuptial conceptions, because there should be added to this percentage a substantial portion of the live births in the sixth, seventh and eighth month after marriage. Bearing this in mind, pre-nuptial conceptions would represent 10% of first live births.

The study of families founded between 1700 and 1730 enables us to determine the age of spouses in that period. The average age was 26.9 years for men contracting a first marriage and 22.4 years for women who had previously been single.⁹ In the case of the latter, the modal age was twenty. The censuses of the period do not give the proportion of married women, by age, unfortunately. But, to judge from the marriage rate, it would seem that the trend to marry was high, long after the disparity between the sexes had vanished, around 1700. The French home government encouraged a high marriage rate amongst Canadians. Bonuses were paid to men who married before the age of twenty, and to girls who married before they were sixteen. But in the eighteenth century, marriages that early in life were exceptional.

What was the fertility of these marriages? It is known for two different periods. Georges Sabagh¹⁰ has estimated the total fertility rate for the years 1666, 1667 and 1681; we have measured¹¹ the fertility of marriages celebrated between 1700 and 1730. It is easier to begin with the last period. The essential of the results can be represented in the form of a fertility curve by age of the women. On Graph 1.3, the ordinate measures fertility rates (annual number of births per 1,000 married women), the age of the women being the abscissa. The legitimate fertility rate stands at 500 per 1,000 up to the age of thirty, and this means that, on average, married women bore a child once every two years up to that age. At the age of thirty-five, it is 460, and then drops quite rapidly: 330 at the age of forty, 120 at the age of forty-five. Behaviour of this nature means one of the

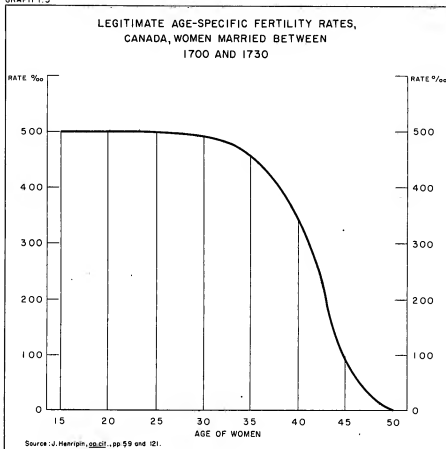
⁸J. Henripin, *op. cit.*, p. 55.

⁹*Ibid.*, p. 96.

¹⁰"The Fertility of the French Canadian Women during the Seventeenth Century", in *The American Journal of Sociology*, Vol. XLVII, March 1942, pp. 680-9.

¹¹J. Henripin, *op. cit.*, pp. 57-89.

GRAPH 1.3



highest fertility rates ever measured up to the present time.¹² Only the Hutterites in the U.S. show a fertility of similar order. A woman married at the age of fifteen and subjected up until her fiftieth year to the fertility rate indicated in Graph 1.3, would have given birth to 13 children. But women in that era were far from getting married at such an early age; we saw earlier that the mean age at marriage for single women who married between

¹²See Louis Henry, "Some Data in Natural Fertility", in *Eugenics Quarterly*, Vol. 8, No. 2, June 1961, p. 84.

1700 and 1730, was 22.4 years. In reality, in the case of those women whose marriages were not interrupted before they reached their fiftieth year, the average was 8.4 children.¹³

But the situation was not the same at the end of the seventeenth century, and this brings us to the study by Sabagh. This author estimated the total fertility rate for Canadians for the years 1666, 1667 and 1681, on the basis of census information for these three years. He found, respectively, 12.0, 10.7 and 9.7 children. Now, in 1666, almost all women between the ages of 15 and 50 were married. Under these conditions, the total fertility rate corresponds more or less to the sum of legitimate fertility rates, which was 13 children for the early eighteenth century. The two results are not incompatible, the difference arising from the small number of women not married in 1666, a factor which reduced the total fertility rate in relation to the figure obtained in adding up the legitimate fertility rates between the ages of 15 to 50.

So high a fertility may astonish, and it is perhaps not superfluous to confirm it with one final source. Yves Martin, in his study of the population of Île-aux-Coudres,¹⁴ applied the eighteenth century fertility rate to the women married in that region in 1844 and found the number of births to correspond just about exactly to the annual number of births in 1842-1846.

This high fertility rate is not perhaps as exceptional as might, at first, be thought. In the following chapter, we find that in 1851, according to our estimates, Canada, as a whole, had not been far removed from that level. The situation was no different for Nova Scotia and Ontario. Married women in Manitoba, in 1891, had the same legitimate fertility as French Canadian women in the eighteenth century. It is interesting to note what a similar behaviour amongst couples would produce today. Multiplying each legitimate fertility rate by the proportion of married women, for each age group in Canada in 1961, one would obtain fertility rates for married and unmarried women.¹⁵ We then get a total fertility rate of 8.87, that is to say that, on the average, each woman would bear about nine children in her lifetime, even if we include those who did not marry. The gross reproduction rate would be 4.32, and the net rate 4.12. These rates are

¹³It is interesting to note that 200 years later, French-speaking rural Canadian Catholic women, born on a farm and with less than eight years' schooling, had had about the same number of children. According to the 1941 Census, women of 45-54 years from this background, and who had been married, had had 8.33 children (see Enid Charles, *The Changing Size of the Family in Canada*, Ottawa, Queen's Printer, 1948, p. 68).

¹⁴Yves Martin, "L'Île-aux-Coudres: population et économie", in *Cahiers de géographie de Québec*, avril 1957, pp. 174-5.

¹⁵Illegitimate births were not taken into account here.

approximately 2.3 times the figure ascertained for 1961. Under these conditions, the Canadian population would quadruple once in 30 years and double once in 15 years. In fact, total fertility rate for 1961 was of the order of 3.8 and, by 1966, had dropped to 3.2.

SUBMISSION TO NATURE AND EVENTS

Modern populations have pretty well overcome the "accidents" of nature. This is clear from the virtually complete disappearance of mortality peaks. But matters were quite different in earlier times and the Canadian population was no exception. From year to year, the change in the number of deaths can be followed throughout the history of New France, as indeed for the Catholic population of Québec, from 1760 to 1880.¹⁶ Smallpox was responsible for the highest mortality peaks; four smallpox epidemics brought up the number of deaths to more than one and a half times what it had been under normal conditions. The excess mortality was 55% in 1670, 240% in 1703, 125% in 1733 and 67% in 1784. Cholera produced a rise of 70% in 1832, and others, later, of lesser importance. One contagious illness in 1687 multiplied the number of deaths in that year by 2.3 times. In 1714, a rise in infant mortality brought about a 70% excess of death. Other examples might equally be cited: once in five years, on the average, an epidemic caused ravages whose consequences can easily be seen in the curve representing the number of deaths. Frequently, the effect of these epidemics spread over a period of two or three years and the peaks were followed by troughs.

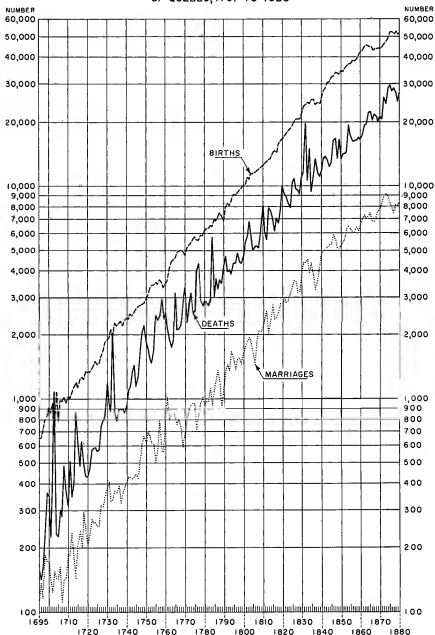
Submission to nature is evident in another phenomenon: the seasonal pattern of births. This pattern is very marked for the births that occurred between 1700 and 1750, which we examined elsewhere.¹⁷ The first births to each couple must be eliminated — the seasonal pattern in this instance is affected by the marriage pattern. In the case of other births, the pattern is autonomous. It is the month of birth which is known, but with a nine-month lag, the seasonal birth pattern can be converted into the seasonal pattern of conceptions. This attenuates, in some degree, the fluctuations in the seasonal pattern. The index for conceptions (annual average 100) rises from 65 in March to a maximum of 138 in June. Are there variations that are related to what is found in the animal world? This can be contested, but the scope of the movement is remarkable. The seasonal index drops to 112 in July, and then drops progressively to 92 in December. There is a secondary peak in January (103) and then a decline to the minimum in March. It

¹⁶See Graph 1.4.

¹⁷J. Henripin, *op. cit.*, pp. 42-49.

GRAPH 1.4

ANNUAL NUMBER OF BIRTHS, MARRIAGES, AND DEATHS,
NEW FRANCE, 1695 TO 1760 AND CATHOLIC POPULATION
OF QUÉBEC, 1761 TO 1880



Sources: *Census of Canada, 1871*, Vol. V, pp. 160-162; *1881*, Vol. IV, pp. 138-139.

may equally be that this was not an accident of nature because a number of couples may have been separated by winter hunting expeditions. This may explain the secondary peak in January because the Christmas festivities brought the husbands home.

Certain events, wars especially, also affected the demographic conjuncture as may be seen in Graph 1.4. This is true for deaths, although these are less affected by wars than by certain epidemics. This was the case for the smallpox epidemic in the years 1702-1703. But it is difficult to dissociate the direct effect on the birth pattern from its indirect effect through the intermediary of marriages. The troughs in the birth curve are almost always preceded (with a one-year lag) by a similar pattern in marriages. The latter fluctuated greatly: it is not unusual to find the number of marriages 10% below normal. Two years correspond to military expeditions – 1702 and 1707 respectively, when the number of marriages dropped by 12 and 25%, respectively. What should particularly be pointed out is that during the five years which preceded the conquest of Canada by England, between 1755 and 1759, the number of marriages fell from 8 to 21% below normal, and this brought a drop in the number of births over the years 1758 to 1761. The troubles of 1837 exercised a similar effect: in that year, there was a 22% drop in the number of marriages, and in the following year, a 16% drop. The number of births fluctuated much less; thus, the last drop in the number of marriages was accompanied by a 5% drop in the number of births in 1837 and 1838, and an 8.5% drop in 1839.

THE FRENCH CANADIAN POPULATION

The great majority of Canadians of French origin descended from a stock that was originally very small: 10,000 persons of whom only three or four thousand were women. If the migration of all these people was situated at the mid-point of the period during which they migrated, that is about 1700, we might deduce that this population has multiplied itself by 550 in 250 years. The following calculation is not so risky: between 1760 and 1960 they multiplied by 75. These calculations only take into account those who remained in Canada and overlook the descendants of the many emigrants who from 1830 onwards, went to settle in the United States.¹⁸ This demographic exuberance has become almost legendary and, certainly, it was quite exceptional. Between 1760 and 1960 world population multiplied by about four, and the population of European origin, seven times.

¹⁸See the special issue: *L'émigration des canadiens français aux États-Unis, Recherches sociographiques*, vol. V, n° 3, sept. - déc. 1964.

But this is simply the result of geometric progression. It suffices that a relatively low rate be maintained sufficiently long to obtain results that seem fantastic. What has characterized the growth of this population is primarily the lack of any major catastrophe (famines, epidemics, wars) comparable to those that have decimated most human populations; a relatively high marriage rate, higher in any event than amongst European populations and finally the maintenance of high fertility amongst couples up until quite recently. This latter characteristic is now past history: Canadian women of French origin who had married and who, in 1961, were near their fiftieth year, had had 4.2 children on average and this is about half the number of children their ancestors had had.

Chapter 2

EVOLUTION OF BIRTH AND FERTILITY RATES OVER THE PAST CENTURY

Confronted with inexact and incomplete information, one frequently hesitates between quite simply abandoning any analysis whatsoever, or seeking to make the best analysis on the basis of the information available. We opted for the latter and pressed the analysis as far as we could. Before 1921, only the statistics of census origin provide a reliable enough guide to assessing birth and fertility rates in Canada. The information from censuses – and this is quite apparent later in the work – is far from perfect and using this information can be risky. We have attempted to use the information at issue, however, to assess the birth and fertility rates for Canada and certain provinces. But even if these estimates can only be considered as indications, in many instances, it seemed the wiser part not to leave so rich a source of information lying fallow. This course had already been opened up by a certain number of authors, amongst whom Nathan Keyfitz to whose contribution we shall have occasion to refer.

1. BIRTH RATE FOR CANADA AND CERTAIN PROVINCES, 1831 - 1965

Registration of births on a uniform and relatively complete basis has only existed in Canada since 1921. Québec should be excepted from this statement because Québec was only integrated into the system in 1926. However, for a certain number of years, this province already had quite a good registration system, so that the number of births in Canada has been a known figure since 1921. There has even been an estimate made of the annual number of births for Newfoundland, since that year.¹ For preceding

¹This information is published by DBS, in its annual report, *Vital Statistics*, Ottawa, Queen's Printer.

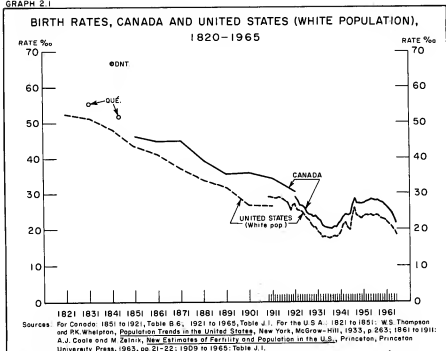
years, we refer to census data, that is to say evaluate the birth rate from the number of children under ten years of age. That is what we have done for the whole of Canada (excepting Newfoundland) and for certain provinces. Thus we can go back to 1851 for the whole of the country and variable dates for the different provinces.

BRIEF EXPOSÉ OF THE METHOD: In applying suitable survival rates to the populations aged 0-4 and 5-9, we can reconstitute the number of births that gave origin to these children. A serious difficulty now arises; generally speaking, the enumeration of children within these age groups is most incomplete. Fortunately, we can make quite a good evaluation for the province of Québec by using an independent method. This method is set forth in Appendix A. This makes it possible to evaluate the error made – at least in the case of Québec – when we use the population 0-9 years from censuses and survival rates. We have supposed that the error thus evaluated for Québec was the same in the other provinces as for the whole of Canada. Other corrections have been made as well, and details will be found in Appendix B which comprises an estimate of the number of births and birth rates for the period prior to 1921.

RESULTS: Table B.6 (Appendix B) gives the birth rates that we have estimated for Canada and for certain provinces. The choice of provinces rests upon the concern with representing each major region in the country. These birth rates, which correspond to ten-year periods circumscribing each census year, have been represented on Graphs 2.1 and 2.2. The first permits a comparison of the birth rate in Canada with the birth rate of the white population in the United States, since the nineteenth century; it includes reproduction of annual birth rates, as recorded in statistics, since 1921 in the case of Canada and since 1909 in the case of the United States. In both countries, the secular drop in the birth rate has been similar, but it would seem that since the nineteenth century, the Canadian birth rate has always been higher than the US birth rate. It is true that we have not been able to evaluate the birth rate in Canada before 1851, but the few assessments we have made for Québec and Ontario² confirm the higher Canadian birth rate from the earliest nineteenth if not the eighteenth century. It is very unlikely that, including the non-white US population would change this basic difference. On the average, the Canadian birth rate was higher by 6 or 7 per 1,000 than the US birth rate in the last half of the nineteenth century, but the difference became much less marked after 1921. Since 1921, the difference has varied between 1.5 and 4.6 per 1,000.

²These two provinces grouped, at the time, about 75% of the population of present Canadian territory.

GRAPH 2.1



Despite the over-all parallelism in the two curves, the evolution of the Canadian birth rate, between 1851 and 1901, was less regular than in the United States. On the basis of our assessment, there was no drop between 1861 and 1871, and there was a rise between 1891 and 1901. We should remember, first of all, that each of these years represents (for Canada) a ten-year period circumscribing the year indicated. These are, therefore, not accidents due to exceptional years. It may be that our estimate is excessive for the years 1871³ and 1901, but it may equally be too low for the years 1851 and 1861. We are inclined to believe that both conclusions are true, but have found no acceptable way of making the necessary corrections.

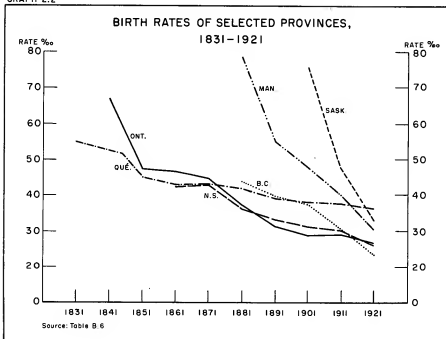
In Graph 2.2, will be found the representation of the birth rates that we have estimated for certain provinces, between 1831 and 1921.⁴ Ontario,

³It will be noted later however, that the Québec birth rate, estimated on a different basis, did not drop between 1861 and 1871.

⁴See Table B.6.

TRENDS AND FACTORS OF FERTILITY IN CANADA

GRAPH 2.2



Manitoba and Saskatchewan have exceptional rates, from the outset because the age structure of the population — which receives many immigrants — favours a high birth rate. The rates for Ontario are higher than those for Québec up to 1871. The birth rate in the latter province is the most resistant to any decline so that in 1921, this rate is highest in the list at 36.3 per 1,000 (37.6 according to vital statistics). The drop in the Québec birth rate between 1831 and 1851 was rapid, from 55 to 45 per 1,000. The movement then tapers off more gradually while the drop is more marked in Ontario and Nova Scotia between 1871 and 1891.

To be interpreted correctly, the birth rate must be measured less crudely. The crude birth rate (which we have just used) results from numerous factors, amongst which the most important are age and sex composition of the population, marriage rate and fertility of couples. Modification of one of these factors involves change in the crude birth rate. It is therefore of interest to use a certain number of more refined methods of measurement, so as to tract down the influence exercised by each of these factors.

TERMINOLOGY

Before going into these various measures, we should be clear as to the meaning we attribute to the terms we use. In this study, the term *birth rate* is only used to designate the ratio between births and the whole of the population. In all other cases, we use *fertility*.⁵ But there are several fertility rates. We shall use the term *fertility rates*⁶ (without any other qualification) to designate the fertility of married and unmarried women taken together; the term *legitimate fertility* means the fertility of married women and *illegitimate fertility* means the fertility of unmarried women. Another term is needed to mean that the rate applies to the whole of the age groups within which a woman may give birth to a child. This is the *general fertility rate*. Where reference is to a single year of age or an age group, the age or age groups will be specified (age-specific fertility rates).

2. FERTILITY RATES FOR WOMEN OF ALL MARITAL STATUS

GENERAL RATES

There is one very simple way of eliminating the effect which the sex distribution of the population may have on variations in the birth rate and, to a great extent, on variations in age distribution: it consists on establishing a ratio between the number of births and the number of women who are of childbearing age (namely between 15 and 50 years of age. Frequently, we limit our studies to women between the ages of 15 and 45, because there are few children born to women between 45 and 50 years of age, particularly when fertility is controlled). We then get a *general fertility rate*. This will be found in Table 2.1 and Graph 2.3, for Canada (from 1851 onwards) and for certain provinces (from different dates).

For Canada, the rate changes from 189 per 1,000 women in 1871 to 144 in 1891, or a 24% drop. It then remains stable until 1911 and drops again to reach an 87 minimum in 1941,⁷ or about half the 1871 rate. There is then a recovery in the general fertility rate (117 in 1956), which then tends to level off (112 in 1961 and 91 in 1965). These patterns do not greatly differ from the birth rates observed earlier, except that resistance to a decrease, between 1891 and 1911, is now more evident. As far as the movements observed for the provinces are concerned, they are not very

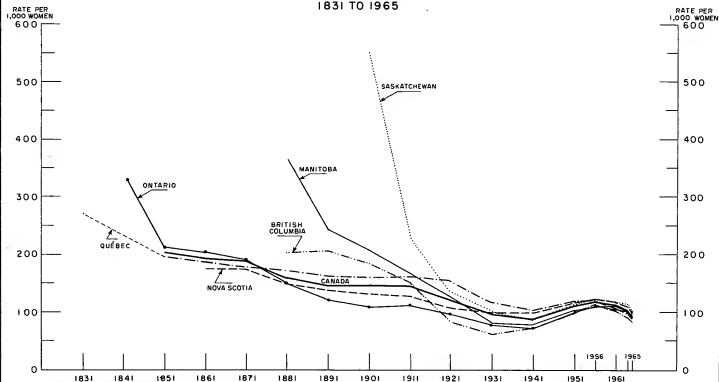
⁵This expression is translated by *fécondité* in French, whereas the term *fecundity* (physiological ability to reproduce) is translated in French by *fertilité*.

⁶In French, we use the expression "*fécondité générale*" to designate the fertility of women of all marital status. But the term "general" in English has another meaning.

⁷In fact, the minimum came in 1937 with a rate of 79.

GRAPH 2.3

GENERAL FERTILITY RATE,*CANADA** AND SELECTED PROVINCES, 1831 TO 1965



* ANNUAL NUMBER OF BIRTHS PER 1,000 WOMEN AGE 15-49 YEARS.

** PROVINCE OF NEWFOUNDLAND INCLUDED FROM 1951.

Source: Table 2.1

Table 2.1 – General fertility rates, Canada and selected provinces, 1831 to 1965

NOTE: Annual number of births per 1,000 women aged 15-49 years.

Year	Canada ^a	Nova Scotia	Québec	Ontario	Manitoba	Saskatchewan	British Columbia
1831	—	—	271	—	—	—	—
1842	—	—	—	329	—	—	—
1851	203	—	196	212	—	—	—
1861	193	174	187	204	—	—	—
1871	189	174	180	191	—	—	—
1881	160	148	173	149	366	—	202
1891	144	138	163	121	242	—	204
1901	145	132	160	108	209	550	184
1911	144	128	161	112	167	229	149
1921	120	105	155	98	125	135	84
1931	94	98	116	79	81	100	62
1941	87	98	102	73	77	84	73
1951	109	114	117	100	103	110	99
1956	117	121	120	110	109	120	112
1961	112	119	109	108	111	119	104
1965	91	98	88	90	92	100	82

^a The province of Newfoundland is included from 1951 onwards.

SOURCES: From 1921 to 1965, DBS, *Vital Statistics* (different years). Before 1921, the number of births is the result of our estimate (Appendix B). The number of women 15-49 years of age for the years 1881 to 1911 is in *Census of Canada, 1941, Vol. I*, p. 606 and following. For previous years, this number had to be estimated (Appendix D).

different from those which were observed in the case of the birth rates. What is remarkable is that Ontario maintained higher fertility levels than Québec until 1871. The exceptionally high rate for 1842 (329) was probably due to the fact that the age distribution of women in the 15-49 age group was particularly propitious because of the high immigration for that period. After 1871, the Ontario fertility rate drops quickly (by 44% between 1871 and 1901) so that between 1881 and 1911, Ontario had the lowest fertility of all provinces, a characteristic later ceded to British Columbia. Nova Scotia's reduction in fertility was not so marked as that of Ontario, although the birth rate of both provinces had been almost the same. The province of Québec shows the greatest stability: between 1851 and 1921, the general fertility rate only dropped by 21% (from 196 to 155) whereas, in the same period, the rate decreased by 41% in Canada, as a whole, and by 54% in Ontario. The Western Provinces are characterized by exceptionally high rates during the latter part of the nineteenth century but rapidly drop, falling below the Québec rates between 1911 and 1921.

TRENDS AND FACTORS OF FERTILITY IN CANADA

Another phenomenon should be noted and we find this repeated in several forms: the convergence of provincial fertility rates, particularly over the course of the last thirty years. In 1931, there was a difference of 54 per 1,000 between the two extreme provinces (Québec: 116, and British Columbia: 62). In 1965, this difference dropped to 18 per 1,000 (Saskatchewan: 100, and British Columbia: 82), if we exclude Prince Edward Island, where the rate was 113, and New Brunswick, 103. We shall have occasion to discuss this phenomenon in greater detail later.

COMPARISON BETWEEN CANADA AND THE UNITED STATES

We noted earlier that the birth rate in Canada has always been higher than in the United States, at least since the middle of the last century. It does not seem that this is due to a more favourable age or sex structure, in Canada, since the fertility of women in the 20-44 age group is also higher in Canada than in the United States. To demonstrate this, we will call upon a slightly different measure than the one we have so far been using: the ratio of children aged 0-4 to women of 20 to 44 years of age. This ratio differs from the general fertility rate in its numerator: instead of annual number of births, the number of children between the ages of 0-4 is used, that is to say the survivors of children born over the course of the preceding five years. Therefore this ratio not only reflects variations in fertility, but also variations in the mortality of young children. It might be thought that this last element does not markedly affect the comparison of fertility levels for the two countries in any given period. These ratios are given in Table 2.2 for Canada and for the white population of the United States. The number of children aged 0-4 years has been corrected to take into account their underenumeration in census-taking. For Canada, the correction factors we used were as follows:^a

1851 : 0.0%	1911 : 8.3%	1941 : 3.0%
1871 : 13.4%	1921 : 21.6%	1951 : 2.8%
1891 : 9.0%	1931 : 1.8%	1961 : 5.0%

The difference between the two populations, very marked in 1850 (25.4%) drops quite quickly and is only 17% twenty years later. Canadian fertility dropped rather quickly over this period of time, as did US fertility

^aThese corrections are based on the comparison between the number of children aged 0-4 years, as reported in diverse censuses, and the number of births in the preceding five years, to whom the appropriate survival rate has been applied. This comparison was made with data for the province of Québec for the years prior to 1931; from that year onwards, information for the whole of Canada has been used. Account has also been taken of net migrations that have taken place between the time of the birth and the time of the census. It is surprising to find an underenumeration of 5% in 1961, a much higher proportion than in prior years.

Table 2.2 - Ratio of children aged 0-4 to women aged 20-44, Canada and United States (white population), 1800 to 1960

Year ^b	Number of children 0-4 years per 1,000 women aged 20-44 ^a		
	United States (white population) ^c	Canada	Percentage difference in relation to Canada
1800.....	1,342		
1810.....	1,358		
1820.....	1,295		
1830.....	1,145		
1840.....	1,085		
1850.....	892	1,196 ^e	-25.4
1860.....	905	—	
1870.....	814	981	-17.0
1880.....	780	—	
1890.....	685	788	-13.1
1900.....	666	—	
1910.....	631	764	-17.4
1920.....	604	839	-28.0
1930.....	506	635	-20.4
1940.....	419	524	-20.0
1950.....	587	669	-12.3
1960.....	710 ^d	815	-12.8

^a These rates have been corrected to account for underenumeration of children and variations in age structure of women aged 20-44.

^b For Canada, a year must be added.

^c SOURCE: W.H. Grabill, C.V. Kiser and P.K. Whelpton, *The Fertility of American Women*, New York, Wiley and Sons, 1958, p. 14.

^d We have multiplied the uncorrected ratio by

1.065, correction factor for the year 1950.

^e Average ratio between Ontario and Québec.

between 1820 and 1850. The relative difference between the two countries drops until 1890 (13.1%), and then rises again. Between 1890 and 1920, Canadian fertility tends to remain pretty well stable, while US fertility continues to drop. The ratio we found for Canada, in 1921, has probably been over-estimated⁹ but it would seem that the relative difference between the fertility levels of the two countries increased after 1890, was still 20% in 1930 and 1940 and after that stood at between 12% or 13% (1950 and 1960).

⁹The correction made in the number of children aged 0-4 years, in 1921, is +21.6%. This correction is based on data for the province of Québec, and it is possible that it is too high for Canada as a whole.

AGE-SPECIFIC FERTILITY RATES

The general rates that we have just surveyed, that is to say rates calculated for all women aged from 15 to 50, are affected by the age distribution of these women. If there are a great proportion of young women, this will tend to raise the general fertility rate and vice versa. This can be compensated for by calculating not a single rate for all women aged 15-50, but a series of rates, each rate corresponding to each single year of age or each specific age group. Generally, rates are worked out for five-year age groups. These fertility tables give a much more exact idea of the behaviour of women in so far as fertility is concerned. It is interesting to know, for instance, whether a fertility decline occurs amongst younger or older women. Indeed, generally speaking, it is amongst older women that the fertility drop is most marked.

Vital statistics give the fertility rates by five-year age groups, for each year elapsed since 1921, for Canada¹⁰ and each of the provinces. We have had to make estimates for the years prior to 1921, limiting ourselves to certain provinces and certain years - 1851 for Ontario and Québec; 1871, 1891, and 1911 for Canada as a whole and selected provinces. These estimates are far from being as precise as might be hoped, but of sufficient interest to work out. The method used appears in Appendix E where the results of these estimates will also be found.

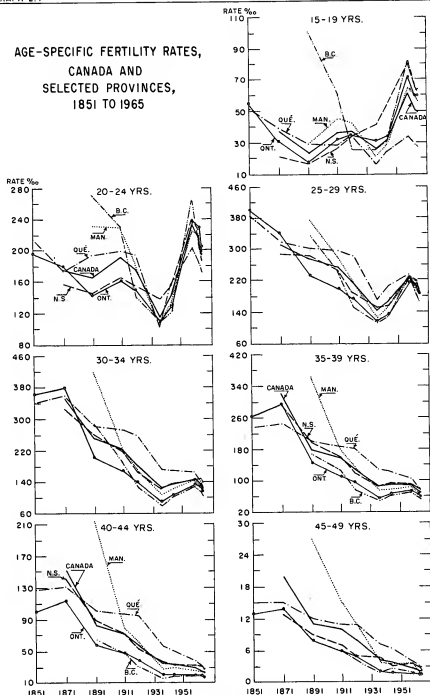
In Graph 2.4 we have illustrated the evolution of these rates. Each panel in this graph corresponds to an age group and each curve represents Canada or a province. We have only represented the years for which we have estimates, the year 1921 (when vital statistics were started) and the subsequent years corresponding to changes in fertility trends: 1937 corresponds to the minimum, 1945 to the beginning of post-war acceleration, 1959 to the maximum that followed and 1965 is the last year for which information is available.

The fertility of the first two age groups is more subject to change than are other age groups. There seems to have been a general rise between 1891 and 1911 and sometimes right up to 1921 for women in the 15-19 age group. There is a very marked drop between 1921 and 1937 and a recovery which more than compensates for the drop, between 1937 and 1959. For these two age groups fertility was much higher, over the course of the last few years than for any other preceding year, with some exceptions: (1) The women between 15 and 24 years of age, in British

¹⁰Without the province of Québec for 1921-1925.

GRAPH 2.4

AGE-SPECIFIC FERTILITY RATES, CANADA AND SELECTED PROVINCES, 1851 TO 1965



Sources: 1851 to 1921: Table E. 2; 1937 to 1965: CBS, Vital Statistics.

Columbia, in 1891, had a much higher fertility rate than has been the case more recently, but this is due to an exceptional circumstance: a very high proportion of the women in that province were married, at that time: 20% at 15-19 years of age and 54% at 20-24. (2) There is a very particular element in the behaviour in Québec in the same regard: the fertility in the 15-19 age group was, for the province of Québec, the highest of all provinces right up until 1891,¹¹ after which this rate dropped till it was below that of all other provinces, particularly since 1945. For some years now, the fertility of women under 20 in Québec is about half what it is elsewhere in Canada. This phenomenon is due to an exceptionally low marriage rate, in that age group, in Québec. Finally, the fertility rate in the 20-24 age group is one for which we find marked convergence for the various provinces.

This convergence is also remarkable for other age groups, where fertility is much more regular. Amongst women in the 25-40 age group, there is a recovery in fertility between 1937 and 1959, but much less marked than amongst younger women. Some provinces have had quite stable relative positions particularly since 1921: in British Columbia, fertility is lowest, Ontario comes next, Nova Scotia and Manitoba have similar rates; finally, since 1911, Québec has had a higher fertility rate than the other provinces but this is tending to disappear. Indeed, this had already happened, in the case of women, aged 25 to 35, by 1963. Indeed, for the past few years, it is the provinces not represented in Graph 2.4, whose fertility rates have remained the highest beyond twenty-five years of age: New Brunswick and Prince Edward Island have had higher fertility rates than Québec since 1945, for the over 25 age group.

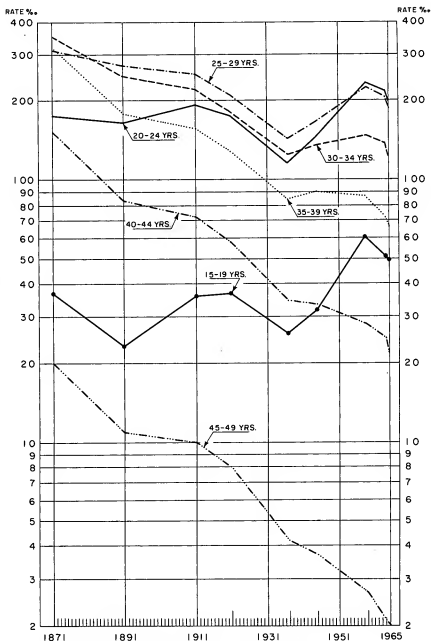
It is interesting to compare the relative amplitude of fertility variations at different ages. Graph 2.5 enables us to draw these comparisons for Canada, since 1871. Since the scale is logarithmic, relative variations can be compared on the basis of the curves' slope. It will readily be noted that the higher the age, the more marked is the over-all drop. On the other hand, the lower the age, the more marked the recovery in the period 1937-1959. Here are the relative variations noted for two particularly significant periods: 1871-1937 and 1937-1965:

Age	Percentage variation	
	1871 - 1937	1937 - 1965
15 - 19 years	-30.8	+93.4
20 - 24 "	-34.7	+69.4
25 - 29 "	-54.1	+30.3
30 - 34 "	-65.0	- 1.9
35 - 39 "	-73.4	-22.4
40 - 44 "	-77.2	-37.2
45 - 49 "	-79.0	-52.4

¹¹If we exclude British Columbia.

GRAPH 2.5

EVOLUTION OF AGE-SPECIFIC FERTILITY RATES, CANADA, 1871 TO 1965



Sources: 1871 to 1921, Table E.2; 1937 to 1965, DBS, Vital Statistics.

Finally, to demonstrate the change in fertility pattern, over the course of time, Graph 2.6 shows the fertility table for Canada for the years 1871, 1891, 1911, 1921, 1937 and 1965.

It is not easy to imagine the over-all level of fertility for a given population at any given moment, and still less to make comparisons, when the fertility is comprised of a series of seven rates, that is to say of a different rate for each of seven age groups. But each fertility table can be reduced to a single index, the total fertility rate. This is a classical method of measure, in demography, and consists in adding up all fertility rates for the ages of 15 to 49. There is moreover one advantage in this system inasmuch as it provides a very concrete picture of fertility: by adding up all the fertility rates, one obtains the number of children that would be born to 1,000 women, in the course of their lives, if they were subjected to the fertility rates observed from their fifteenth to their forty-ninth year. In practice, the fertility rates for each five-year age group are added up and multiplied by five. This method presupposes that the women are unaffected by any mortality. Although this system seems different in form, it is quite analogous to the general fertility rate that we have already examined, excepting that the total fertility rate is not affected by the age structure of the female population aged 15 to 49.

In Table 2.3, we find the total fertility rate for Canada and some provinces for the same years as in Graph 2.5.

In referring to the information in the table, we find that each woman would have borne in 1851 an average of about seven children in the course of her life (average for Québec and Ontario). Note that this figure reckons with the fact that certain women married late or not at all. In Canada, fertility dropped by only 3% in 1871, and 30% in 1891 (4.9 children). The drop was low over the ensuing years since, in 1911, it was 33% in relation to 1851; in 1921, it was 44%. The minimum came in 1937, when the 2.6 children per woman represents only 38% of the fertility observed in 1851. There follows a marked recovery: in 1959, the level jumps back to the 1921 level. However, there is a marked decline between 1959 and 1965, namely from 3.94 children to 3.19 children or a 19% drop. This latter drop is particularly marked in Québec (23%) and British Columbia (26%). To summarize, the same patterns are found in this instance as are found with general fertility rates. The same is true of the relative position of provinces and we shall not repeat here remarks already made earlier in the text.

GRAPH 2.6

AGE-SPECIFIC FERTILITY RATES, CANADA, 1871 TO 1965

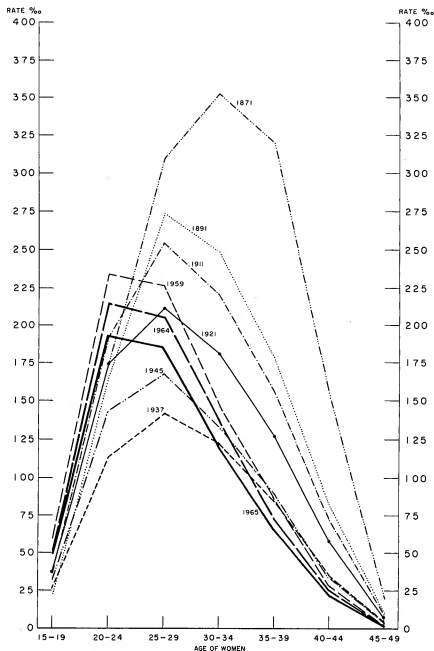


Table 2.3 – Total fertility rate (per 1,000 women), Canada and selected provinces, 1851, 1871, 1891, 1911, 1921, 1937, 1945, 1959 and 1965

Year	Canada	Nova Scotia	Québec	Ontario	Manitoba	Saskatchewan	British Columbia
1851	—	—	6,839	7,218	—	—	—
1871	6,828	6,178	6,413	6,770	—	—	—
1891	4,916	4,966	5,586	4,031	8,227	—	6,180
1911	4,700	4,444	5,442	3,664	5,258	7,018	4,512
1921	3,980	3,585	5,288	3,221	4,047	4,321	2,790
1937	2,646	2,860	3,268	2,161	2,322	2,877	1,941
1945	3,018	3,157	3,666	2,469	2,760	3,131	2,369
1959	3,935	4,100	3,928	3,773	3,855	4,245	3,955
1965	3,192	3,449	3,025	3,219	3,318	3,622	2,935

SOURCES: For the period 1851 to 1911, see Appendix E; from 1921 onwards, see DBS, *Vital Statistics*, different years, except for Canada and Québec, for which we worked out an estimate for the year 1921 (Appendix C).

However, we now have to deal with an interpretation problem, that has been very much discussed by demographers, over the course of recent years. The total fertility rate represents the number of children which 1,000 women would bear were they subjected to the fertility rates *observed for a given year*. This is what is called *current rates* (period rates). But this is purely imaginary. What happens is that women go through a number of fertility rates which correspond, not to the rates of a single calendar year, but to the rates current between their fifteenth and fiftieth birthdays. So, current rates may give a false impression of the real behaviour of women. This happens when behaviour in regards to marriage and fertility varies to a great extent. Over the last forty odd years, behaviour in these fields has varied just as elsewhere, and this means that if the picture of the situation is to conform to reality, we must calculate cohort fertility rates. The difference is appreciable.

3. COHORT FERTILITY

By cohort is meant a group of individuals who have lived through the same event at about the same time; in this case, the cohort is comprised of women all born in the same year (or thereabouts). Take, for instance, the women born the first of January 1910. These women all became fifteen years of age on January 1, 1925, and in the course of that year, were subjected to the fertility observed for women of fifteen progressing towards sixteen, in 1925. Their fertility, in 1926, was that of women aged sixteen, in 1927, it was that of women of seventeen years of age and so forth. In the case of this cohort, this calculation leads to the fertility noted in 1959

for women then aged forty-nine. It is this series of rates which constitutes completed fertility of the cohort of women born on January 1, 1910. In fact, it is almost never possible to measure the fertility of such precisely defined cohorts. What is usually attempted is to follow the cohorts of women who were born over a twelve-month period. We have had to depend on even less precision.

In referring to the 1906 cohort, for instance, we mean women born between January 1, 1905 and January 1, 1907. We suppose that the fertility of these women, between their fifteenth and sixteenth birthdays, is the fertility observed for women aged 15 in 1921 (that is, for women aged between 15 and 16 years at the time of birth of their children). This process involves a certain amount of overlap from one cohort to another and this tends to cut down the difference between two successive cohorts. This does not prevent our having quite a good idea, however, of the evolution of fertility of the different cohorts and more particularly of the difference between cohort fertility and current fertility. This method, based on vital statistics, can only be applied to cohorts born between 1901 and 1930. The fertility of preceding cohorts was measured from 1941 and 1961 census statistics on the number of live-born children per married woman.

In Appendix F, will be found some technical details on the computation of cohort fertility, and some remarks on their interpretation. We shall here limit ourselves to giving the results of our own assessment and comparing these results with the current rates (Table 2.4 and Graph 2.7). In this comparison, we have juxtaposed the fertility of a given cohort with the total fertility rate for the year in which the cohort was, on average, twenty-eight years of age. This is about the average age of the women involved, at the time of birth of their children. Assessment of the fertility of certain cohorts was based on several methods.

We shall only retain a single measure for each cohort: for those from 1874 to 1919, we shall use the evaluation based on census statistics (see Appendix F, Table F.2); for the cohorts from 1920 to 1930, where the evaluation of fertility derives from vital statistics, we have used results from the second method (Table F.1). The fertility of cohorts born from 1920 to 1922 has been slightly adjusted to smoothen the transition between the two methods.

There is sometimes an appreciable difference between the fertility of cohorts (that is children born in reality) and fertility measured by the current rate method (total fertility rate). The latter figures have fluctuated widely and are subject to short-term changes that are not found in cohort rates. The current rates are higher than cohort rates up until 1931, and the

GRAPH 2.7

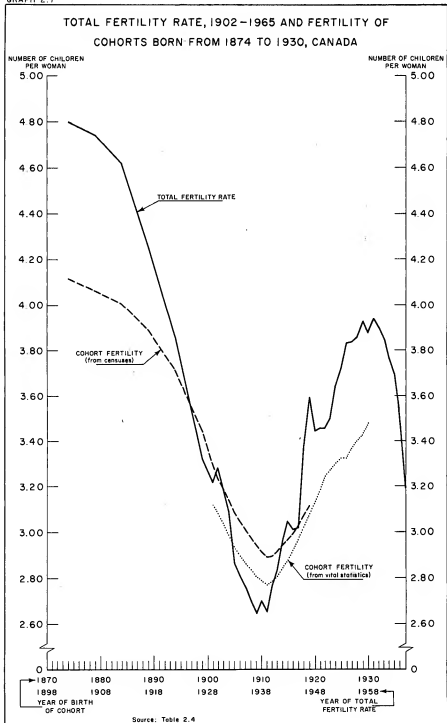


Table 2.4 - Total fertility rate (period rate), 1902 to 1965, and fertility of cohorts born from 1874 to 1930, Canada

Year of birth of cohort ^a	Year of current rate	Number of births per 1,000 women		
		Completed cohort fertility ^b	Total fertility rate ^c	Relative difference ^d
1874	1902	4,118	4,800 ^e	16.6
1879	1907	4,067	4,740 ^e	16.5
1884	1912	4,007	4,620 ^e	15.3
1889	1917	3,891	4,260 ^e	9.5
1894	1922	3,714	3,860 ^e	3.9
1899	1927	3,444	3,319	- 3.6
1901	1929	3,298	3,217	- 2.4
1902	1930	3,235	3,282	1.4
1903	1931	3,191	3,200	0.3
1904	1932	3,138	3,084	- 1.7
1905	1933	3,082	2,864	- 7.1
1906	1934	3,042	2,803	- 7.8
1907	1935	3,009	2,755	- 8.4
1908	1936	2,971	2,696	- 9.2
1909	1937	2,944	2,646	-10.1
1910	1938	2,916	2,701	- 7.4
1911	1939	2,891	2,654	- 8.2
1912	1940	2,896	2,766	- 4.5
1913	1941	2,912	2,832	- 2.7
1914	1942	2,943	2,964	+ 0.7
1915	1943	2,966	3,041	+ 2.5
1916	1944	2,991	3,010	+ 0.6
1917	1945	3,029	3,018	- 0.4
1918	1946	3,074	3,374	+ 9.8
1919	1947	3,120	3,595	+15.2
1920	1948	3,164	3,441	+ 8.8
1921	1949	3,201	3,456	+ 8.0
1922	1950	3,249	3,455	+ 6.3
1923	1951	3,377	3,503	+ 7.0
1924	1952	3,309	3,641	+10.0
1925	1953	3,331	3,721	+11.7
1926	1954	3,333	3,828	+14.8
1927	1955	3,352	3,831	+14.3
1928	1956	3,386	3,858	+13.9
1929	1957	3,424	3,925	+14.6
1930	1958	3,476	3,880	+11.6
	1959		3,935	
	1960		3,895	
	1961		3,840	
	1962		3,767	
	1963		3,694	
	1964		3,540	
	1965		3,192	

^aFrom 1874 to 1899, these are women born over the course of the five-year period which centers on the first of December of the year preceding the indicated year. The other cohorts were born over the course of the two-year period centering on January 1 of the year indicated. The rates for the years 1901-1903, 1905-1908, 1910-1913, 1915-1918 and 1920-1922 have been interpolated.

^bSee Appendix F, Tables F.1 and F.2.

^cDBS, *Vital Statistics*, 1965, p. 72.

^dIn percentages as a ratio of cohort rates.

^eEvaluation by interpolation from the results of Table 2.3.

difference tends to decrease (16.6% in 1902 to 0.3% in 1931); from 1932 to 1941, the former are lower than the latter, the maximum difference being found in 1937 (10.1%). From 1942 onwards, the current rates once more become the highest, and this difference becomes appreciable in 1946 (9.8%) and 1947 (15.2%); it then drops over the course of the next three years only to again become greater till it reaches 14.8% in 1954. Since that time, it has tended to drop but is still more than appreciable in 1958 (11.6%). This difference in the behaviour of the two curves is almost exactly the same as that observed in the United States.¹²

Cohort fertility represents what happens in reality. Women born in 1874 gave birth, on the average, to 4.1 children (those who were married gave birth to 4.5 children). The fertility of women who followed them decreased constantly, and this pattern stepped up in tempo starting with the women born in 1890 or thereabouts, and who began bearing children about 1910. Women born in 1911 were those with the lowest fertility (2.9 children) and gave birth to most of their children between 1930 and 1940, years of economic depression. The fertility of the following generations becomes higher and higher: 3.3 children for those born between 1925 and 1927; the rise continues and the last cohort, the 1930 cohort, has a rate of 3.5. We should remember that our evaluation is subject to error in the case of the last three cohorts, so there is some question as to the rise noted from the 1927 to the 1930 cohort. The latter figure of 3.5 children is quite a bit higher than what was estimated for the United States: 2.9 according to an average hypothesis and 3.1 according to a high hypothesis, despite the fact that nuptiality is lower in Canada than in the United States. If our estimate is correct, the 1930 cohort gave birth to as many children as did the cohort born in 1893 and its fertility is 20% higher than the fertility of the less prolific cohort, the 1911 cohort.

There is a further lesson to be learned from this comparison between cohort fertility and current rate. It is a most valuable precept in interpreting mensurations of fertility based on rates observed over the course of a year. In 1965, the total fertility rate (period) is lower (3.2 children) than the completed fertility we estimated for the cohort born in 1930 (3.5 children). Since 1965, it would seem, that period rates no longer represent an over-estimation of fertility in relation to the actual behaviour of women.¹³ Rather, it would seem that, even though cohort fertility started to decrease with the 1930 cohort, the decline in the total fertility rate accentuates this decline: the explanation for this must in great part stem from the fact that

¹²See P.K. Whelpton, *op. cit.*, p. 21.

¹³The total fertility rate in 1965 should be compared to the completed fertility of the cohort born in 1937, for which we have no estimate. However, it would be surprising if the 1937 cohort had a completed fertility lower than 3.2 children.

couples have, since a few years, slightly postponed the birth of their children. We are consequently in the presence of a situation which is the reverse of what has prevailed since 1941. In the case of this new situation, the total fertility rate represents an under-estimation of the actual fertility of women.

Perhaps we may complete this analysis of a comparison between the two series of rates by an attempt to explain the spread between the two curves in Graph 2.7. It does seem that the deficit in births in the years 1932-1941 was quite rapidly recovered; probably the recovery was a *fait accompli* by 1952. From that date onwards, the increased strength in current rates result from what we may refer to as birth anticipation. This phenomenon results from a lower age at marriage and a tendency for couples to bear their children in a shorter time span following their marriage. But a phenomenon of this nature cannot last indefinitely, so we should expect a decline in current fertility rates, to the approximate level of cohort fertility. The recent drop in current fertility rates point to the conclusion that these two phenomena, namely a lower age at marriage and concentration of births into the immediate post-marriage period are stabilizing. If this is true, and couples continue to desire the same number of children, the total fertility rate should fluctuate around a figure close to 3.5.

4. LEGITIMATE FERTILITY RATES

Fertility, that is to say that of married and unmarried women, results from two different phenomena: nuptiality and the behaviour of married couples with regard to births. In order to be more specific, let us add that nuptiality encompasses not only the passage from celibacy to marriage, but also the passage from marriage to widowhood or divorce. We might add another factor of fertility, and that is illegitimate fertility, although this is less important. It is clear that marriage affects fertility, so that any change in the fertility rate of a specified age group may be as much due to a change in marriage rates as to a change in the fertility of couples. There is a recent example: between 1941 and 1951, the fertility rate of women aged 15-19 rose from 30.7 to 47.9 per 1,000. The greater part of this variation is due to the fact that a greater proportion of women in this age group were married in 1951 than was the case in 1941. Another example: the high fertility rate of women in the 15-19 age group in British Columbia in 1891 was due to the fact that almost 20% of their number were married.

The role of variations in the marriage rate will be systematically studied in the following chapter. We shall here examine the evolution of legitimate fertility. It can be done on the basis of rates analogous to the rates used in studying fertility. The only difference lies in the fact that

TRENDS AND FACTORS OF FERTILITY IN CANADA

instead of dividing the number of births by the number of women, the number of legitimate births is divided by the number of married women. The legitimate fertility rates since 1921 may be calculated on the basis of vital statistics information. Prior to that date, we have attempted to make estimates.

GENERAL LEGITIMATE FERTILITY RATE

The general legitimate fertility rate is calculated by dividing the annual number of legitimate births by the number of married women in the 15-49 age group. This rate is found in Table 2.5, for Canada and the provinces for which we have made estimates going back to the nineteenth century. Graph 2.8 indicates the same results. We should point out that for years prior to 1921, the total sum of legitimate and illegitimate births has been brought under the heading of married women, because there was no information available on the proportion of illegitimate births.

The fertility of couples was very high, prior to 1851, in Québec and even higher in Ontario. The rate of 482 per 1,000 in Ontario, for the year 1842, can only be explained on the basis of an abnormally young age

Table 2.5 – General legitimate fertility rate,^a Canada and selected provinces, 1831 to 1961

Year	Canada ^b	Nova Scotia	Québec	Ontario	Manitoba	Saskatchewan	British Columbia
1831	—	—	419	—	—	—	—
1842	—	—	—	482	—	—	—
1851	—	—	357	362	—	—	—
1861	—	378	370	376	—	—	—
1871	378	366	355	358	—	—	—
1881	—	—	—	—	—	—	—
1891	285	291	312	245	406	—	310
1901	—	—	—	—	—	—	—
1911	256	247	299	209	275	331	228
1921	204	187	283	165	194	193	126
1931	161	169	225	130	138	158	98
1941	149	165	201	118	133	141	116
1951	159	162	193	138	147	155	130
1956	163	167	188	146	148	163	141
1961	153	162	167	142	147	157	131

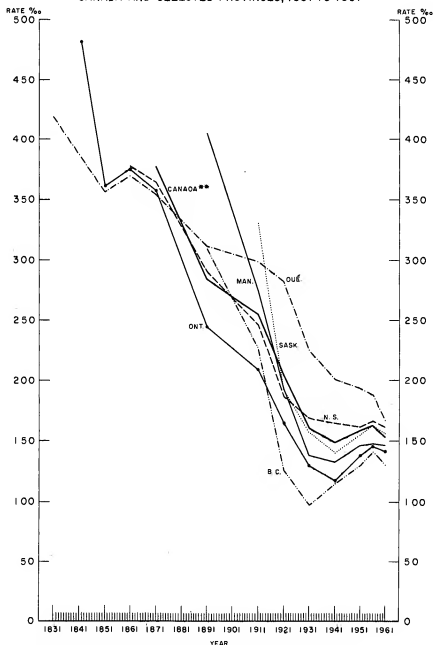
^a Annual number of legitimate births per 1,000 women aged 15-49 years.

^b The province of Newfoundland is included from 1951 onwards.

SOURCES: From 1831 to 1911: Estimate based on an evaluation of births that we have made (see Appendix B) and an evaluation of the number of married women aged 15-49 (Appendix D). From 1921 to 1961: DBS, *Vital Statistics* (for different years) and censuses of Canada.

GRAPH 2.8

LEGITIMATE GENERAL FERTILITY RATE,* CANADA AND SELECTED PROVINCES, 1831 TO 1961



* ANNUAL NUMBER OF LEGITIMATE BIRTHS PER 1,000 MARRIED WOMEN AGED 15-49.

** THE PROVINCE OF NEWFOUNDLAND IS INCLUDED FROM 1951 ONWARDS.

Source: Table 2.5

structure, and this was probably the case.¹⁴ If we overlook the variations of little importance observed between 1851 and 1871, the conclusion is that legitimate fertility remained quite stable over the course of this period, at a level close to 360 per 1,000. After 1871, fertility dropped rapidly in Ontario and Nova Scotia; the drop was less marked in Québec where, in 1891, the rate (312) was 27% higher than the rate in Ontario (245). The drop slows down its momentum between 1891 and 1911 and, for the whole of Canada, was only about 10%. Over the next twenty years, the rate decreases from 256 to 161 per 1,000 for Canada, or a 37% drop in comparison with the 1911 level. The provinces represented on Graph 2.8 all are characterized by a drop of the same size, except Québec, where it was only 25% (299 to 225). This province is different from the others by virtue of the fact that the drop took place between 1921 and 1931, while it remained about the same in these two decades in Canada as a whole, in Ontario and Manitoba, and occurred especially over the years 1911 to 1921 in Nova Scotia, Saskatchewan and British Columbia.

The fall tended to slow down between 1931 and 1941 and a moderate recovery then became manifest up until 1956 (except in Québec) and a new decline set in between 1956 and 1961. In 1961, only British Columbia returned to the 1921 level. For the whole of Canada, the 1961 legitimate fertility rate was 60% lower than the 1871 rate (153 as compared to 358). Indeed, the reduction was pretty well a *fait accompli*, over the sixty-year period from 1871 to 1931, except for Québec where the decline was slower, more gradual, but about as high as in the rest of Canada. This is a first indication of the radical change in the behaviour of couples in questions concerning their fertility: over a sixty-year period they reduced the number of their children by one-half. To judge from this first index of legitimate fertility, the behaviour of couples has remained quite stable since 1931, despite oscillations that are rarely beyond a 5% spread from the average legitimate fertility rate, over the years 1931-1961.

Note must also be taken of the increasing spread evident from province to province, between 1871 and 1921. In this latter year, the Ontario fertility level was 42% lower than the Québec level, and the British Columbia level was 66% lower than the Québec level. From 1921 onwards, this gap is progressively closed so that by 1961, British Columbia was only 22% lower than the Québec level. The latter province is no longer the province with the highest legitimate fertility rate; since 1951, the rate has been higher in New Brunswick and since 1961, higher in Prince Edward Island.

¹⁴In 1681, the same level was 364 per 1,000, judging from births checked by Tanguay and the census of that year.

LEGITIMATE AGE-SPECIFIC FERTILITY RATES

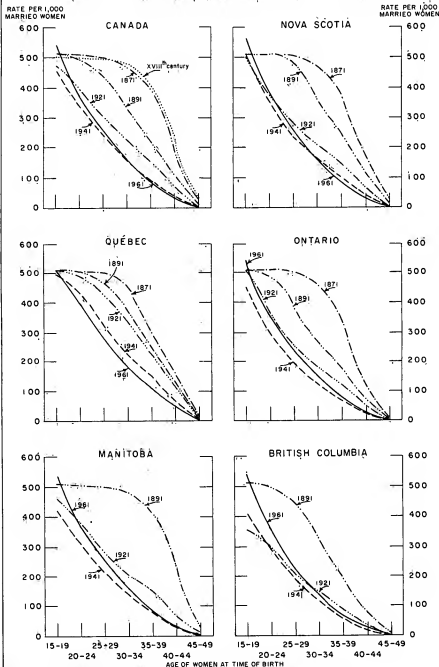
The fertility of couples has not decreased at the same rate for all age groups. Indeed, fertility is perhaps higher today amongst women under twenty than was the case a century ago. But beyond twenty years of age, the rate is lower and drops increasingly with age of women. We cannot directly measure legitimate fertility by age, before 1921. However, we have attempted to represent what it might have been, with the help of a method explained in Appendix B. We only submit these estimates with a good many reservations. As stated in the Appendix, these are only *plausible* rates, and subject to numerous errors. First of all, they depend on the value of our estimate of the number of births for the two five-year periods surrounding each census year. We have then had to ascribe to the married women all births and not just the legitimate births; finally, the shape of the age-specific fertility curve is somewhat arbitrary. We supposed that fertility did not exceed 510 per 1,000 married women in the 15-25 age group, and the rates for other age groups were adjusted in line with the shape usually assumed by age-specific fertility curves, and this shape varies, of course, with the fertility level.

In Graph 2.9 will be found the graphic representation of legitimate fertility tables for the years 1871, 1891, 1921, 1941 and 1961. Each panel in the graph represents either Canada or one of the provinces for which estimates were made. From 1921 onwards, the fertility rates have been calculated from vital statistics and these only account for legitimate births. We have not shown the province of Saskatchewan. On the other hand, in the panel concerning Canada, we have given the curve representing the fertility of couples in the eighteenth century.

If our evaluation is correct, in 1871, the legitimate fertility rates in Canada were very similar to rates in the eighteenth century (see Chapter 1). An appreciable decrease then took place over the next twenty years, particularly marked amongst women over 25. The drop was about 35% at the age of 35, and about 50% at the age of 40. A reduction of the same scale equally took place between 1891 and 1921. In this latter year, the curve took the shape usually found in the case of populations that limit their fertility voluntarily, that is to say, where fertility rates do not remain at a constant level between the ages of 15 to 25 or 30 years, but fertility drops from the starting point of the curve. There is another drop in the curve, though less marked, between 1921 and 1941. Once again, the drop increases proportionately with age: about 10% at 20 years, 20% at 35 years, and 40% at 40 years. There is a recovery in legitimate fertility between 1941 and 1961, particularly in the lower age groups, but the rates continue to drop beyond 35 years.

GRAPH 2.9

LÉGITIMATE AGE-SPECIFIC FERTILITY RATES, CANADA AND SELECTED PROVINCES, 1871, 1891, 1921, 1941, AND 1961



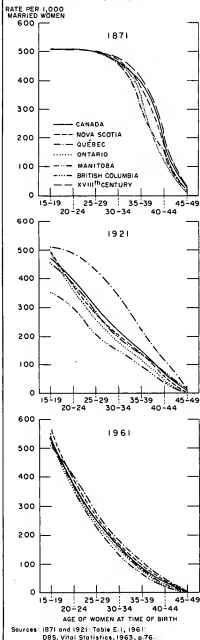
There are analogous variations noted for the provinces. Certain divergences must be noted however. In Nova Scotia, the drop is less pronounced between 1871 and 1891, but this delay is made up by 1921. Behaviour is about the same in Ontario as in Canada, although fertility decreases are slightly more marked up until 1941; on the other hand, the recovery in the 1941-1961 period is more pronounced. In 1891, Manitoba's fertility was as it had been in the eighteenth century or about the same as that of the other provinces in 1871. British Columbia's fertility rate markedly decreased between 1891 and 1921; the 1941 rates are scarcely lower than the 1921 rates. Compared to Canada as a whole, Québec is probably the most singled out province amongst those represented. Up until 1921, the drop in Québec's fertility rates was relatively low, but it becomes especially high between 1921 and 1941. Another peculiarity: the Québec curve for 1961 is lower than the curve for 1941.

Graph 2.10 permits a comparison of the legitimate fertility curves for Canada and the provinces for the years 1871, 1921 and 1961. What must particularly be observed is the spread developing between the curves from 1871 to 1921, and the decrease in this gap for 1961. Indeed, for the two extreme years, the curves are just about identical, but in 1921, the relative difference between the British Columbia and Québec rates (in relation to Québec rates) is 30% in the 15-19 age group, 40% in the 20-24 age group, 52% in the 25-29 age group, 57% in the 30-34 age group, 59% in the 35-39 age group, 70% in the 40-44 age group and 72% in the 45-49 age group. It should be added that if all the provinces of Canada were taken into consideration, the convergence in curves, in 1961, would be less pronounced, because two of the provinces not represented on Graph 2.10 — the provinces of Prince Edward Island and New Brunswick, had fertility rates higher than Québec's rate.

To have some idea of the comparative evolution in legitimate fertility rates, by age groups, we have used a logarithmic scale in Graph 2.11, to work out the evolution of each fertility rate in Canada from 1871 to 1961. It should be noted that the relative drop becomes increasingly pronounced as the age gets higher. In comparison with the 1871 level, the 1961 fertility rate is a little higher in the 15-19 age group, but lower for the other age groups: 30% for 20-24 years, 49% for 25-29 years, 65% for 30-34 years, 78% for 35-39 years, 82% for 40-44 years, 89% for 45-49 years. For women aged 15 to 30, the drop was most rapid over the 1911-1941 period. In the case of other ages, the drop between 1871 and 1891 was as rapid as for the period 1911-1941. It should be noted that beyond the age of 35 years, there is no fertility increase after 1941, as amongst lower age groups.

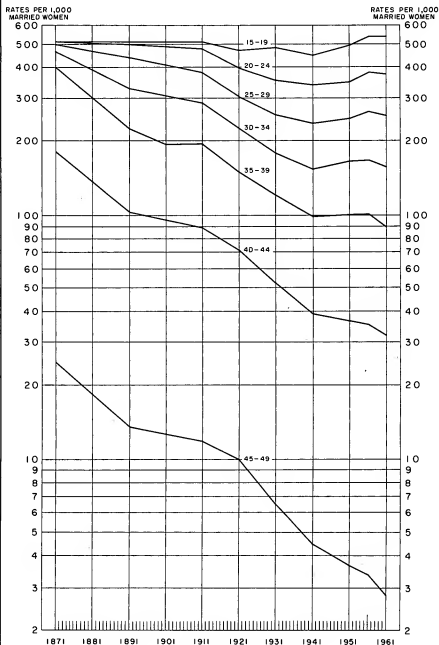
GRAPH 2.10

COMPARISON OF LEGITIMATE AGE-SPECIFIC FERTILITY RATES, CANADA AND SELECTED PROVINCES, 1871, 1921, AND 1961



GRAPH 2.11

EVOLUTION OF LEGITIMATE AGE-SPECIFIC FERTILITY RATES, CANADA, 1871 TO 1961



Sources: 1871 to 1921: Table E.1; 1931 to 1961: DBS, Vital Statistics, 1963, p.76.

COMPLETED FERTILITY OF EVER-MARRIED WOMEN

A more exact, a truer appraisal of the behaviour of couples in regard to the number of children they conceive can be worked out on the basis of 1941 and 1961 census information. When the census was taken, in both of those years, the married women and women who had been married were asked the number of children they had borne live. This information is available for women in different age groups so, changes over a given time lapse can now be established by comparing different age groups. This is not a procedure exempt of criticism because it is quite possible that the women who have survived at the time of census-taking do not accurately represent all the women in their generation, including those who have died. In other words, it is possible that women aged 70-74 years, for instance in 1961, constituted a biased sample of the women of their generation, from the fertility viewpoint. We have no idea what influence this selection would have, if indeed it does exist. It is possible that the most fertile women have been over-represented as would be the case were health and longevity associated with high fertility. This is only a hypothesis, however, and a hypothesis that is not confirmed by the fertility study of certain ancient populations.

By consulting this source of information, however, some notion may be had of the completed fertility of women who have been married at some time or other in their life. The last generation for which this figure is known or may be calculated without too great an error is the generation born between 1916 and 1921. The useful information from the 1941 and 1961 Censuses has been reproduced in Table 2.6: it consists in the number of live births per 1,000 women ever married, according to their age at the time the census was taken. It should be noted that a certain number amongst them may only have been married for a very short time, either because they married late in life, or because they became widowed or divorced.¹⁵ By combining the information from the two censuses, and making some interpolations for the generations born before 1896, the fertility of quinquennial cohorts born between 1871 and 1921 can be worked out. The number of children per woman drops from 4.54 to 4.24 between the generations of 1871-1876 and 1886-1891. The drop then accelerates, and reaches the minimum of 3.14

¹⁵One anomaly should be pointed out: according to the 1941 Census, the number of children per 1,000 women ever married, and who were in the 40-44 age group when the census was taken, came to 3,795. These women had not completed their fertility period. These were the women in the 60-64 age group when the 1961 Census was taken, and their fertility had then come to an end, and apparently totalled only 3,672, according to 1961 Census figures. There are several possible explanations: death or emigration, between 1941 and 1961, of the most fertile women; marriage of a certain number amongst them; immigration of less fertile women or again, error in one or the other census. It is difficult to determine which of these several factors may have been the deciding one.

Table 2.6 – Number of live-born children per 1,000 women ever married, according to their age in 1941 and in 1961, Canada

Age of women ever married		Number of children per 1,000 women ever married		Years of birth of women ever married	Number of children per 1,000 women ever married ^c
In 1941	In 1961	In 1941 ^a	In 1961 ^b		
20-24	40-44	1,003	3,231	1916 - 1921	3,231
25-29	45-49	1,640	3,110	1911 - 1916	3,110
30-34	50-54	2,425	3,154	1906 - 1911	3,154
35-39	55-59	3,206	3,385	1901 - 1906	3,385
40-44	60-64	3,795	3,650	1896 - 1901	3,811
45-49	65-69	4,167	4,038	1891 - 1896	4,090
50-54	70-74			1886 - 1891	4,240
55-59	75-79	4,398		1881 - 1886	4,345
60-64	80-84			1876 - 1881	4,440
65 and over ..	85 and over	4,818		Before 1876	4,818 ^d

^a DBS, *Census of Canada, 1941*, Vol. III, Table 51, pp. 682-3.

Canada, 1961, Bulletin 4.1-8, Table H1.

^b DBS, *Census of Canada, 1961*, Bulletin 4.1-8, Table H1. ^c For women born between 1901 and 1921, we used figures from the 1961 Census; the figure corresponding to the women born between 1916 and 1921 was increased by 1% to account for the children these women will bear between the ages of 45 and 50 years. In the case of women born before 1906, we used the information from the 1941 Census. The number for the women born between 1896 and 1901 was increased by 2%, and the others were worked out by interpolation.

^d The rate for women born between 1871 and 1876 can be estimated at 4,535.

children, for women born between 1911 and 1916, who bore most of their children during the economic crisis years of the thirties. Their fertility was 31% lower than the fertility of the generations of 1871-1876.

The same estimates can be worked out for each province and for the Northwest Territories. They will be found in Table 2.7. We only indicate the results corresponding to the last column in Table 2.6; the procedure was the same. We also added the fertility for age groups under forty. In the case of Newfoundland, we only have information from the 1961 Census. We used this source and no other for the Northwest Territories, due to the obvious under-evaluation in the 1941 Census. The rates in Table 2.7 have been reproduced in Graph 2.12. One is struck primarily, by the similarity in rates in the lower age groups, and by the progressive spread of the curves, particularly beyond the age of thirty. The Northwest Territories should be considered separately because fertility there differs markedly from fertility in the provinces. In 1961, 58% of the population in that region was of Indian or Eskimo origin and it may be concluded that women in these ethnic groups do not digress much from natural fertility.¹⁶ Over the age of 35, fertility in

¹⁶The fraction represented by Indian and Eskimo women tends to increase with age: 63% for women in the 20-24 age group, 59% for women in the 45-54 age group and 91% for women of 70 years and over.

Table 2.7 - Number of live-born children per 100 women ever married, according to their age in 1961, Canada and provinces

NOTE: The sources of the information for this table are the same as in Table 2.6. The interpolations have also been made in the same way.

Age in 1961	Year of birth of women	Number of live-born children per 100 women ever married											
		Canada	Nfld.	P.E.I.	N.S.	N.B.	Québec	Ontario	Manitoba	Saskatchewan	Alberta	B.C.	N.W.T.
15-19 years	1941-1946	74	92	82	81	91	69	72	64	80	71	73	86
20-24 " ...	1936-1941	133	181	148	154	161	124	120	131	139	140	141	167
25-29 " ...	1931-1936	218	296	264	247	274	216	203	216	237	225	215	287
30-34 " ...	1926-1931	278	389	361	312	347	295	252	272	296	278	257	367
35-39 " ...	1921-1926	310	451	402	345	388	355	272	301	321	304	270	481
40-44 " ...	1916-1921	323	494	392	361	396	391	274	304	333	307	262	488
45-49 " ...	1911-1916	311	495	426	344	400	384	259	282	327	301	239	544
50-54 " ...	1906-1911	315	471	389	343	416	401	254	284	350	314	237	542
55-59 " ...	1901-1906	338	487	412	369	418	442	267	318	386	343	247	594
60-64 " ...	1896-1901	381	509	453	409	480	505	294	358	434	379	261	687
65-69 " ...	1891-1896	409	553 ^a	452	438	502	547	312	390	458	399	274	651 ^a
70-74 " ...	1886-1891	424		450	457	514	582	328	415	474	415	286	
75-79 " ...	1881-1886	434		450	465	515	605	341	436	482	424	293	
80-84 " ...	1876-1881	444		458	473	517	623	358	464	501	447	310	
85 y. & over	Before 1876	482		490	485	521	640	394	522	547	501	357	

^a 65 years and over.

the Northwest Territories exceeds fertility in Canada by 55 to 75%. Women in the 60-64 age group, for instance, had had an average of 6.9 children during their lifetime, whereas the average for Canada was only 3.8.

We might now examine the change in the number of live-born children by age of women who had already been married in Canada, in 1961. Those who were under 20 years of age had 0.7 children, on average. This figure almost doubled (1.3) for women in the 20-24 age group. In representing groups of ages by average age in each group, the figure comes to 2.2 children at age 27.5 years, 2.8 children at 32.5 years and 3.2 children at 42.5 years. This figure drops thereafter, women in the 45-49 age group having had 3.1 children. The recovery in the fertility of couples has come into play; women born between 1916 and 1921 had already had more children by 1961 than had the women who preceded them, even though the latter had for all purposes reached the end of their fecund period. The fertility of women in the 50-54 age group was also lower than that of women in the 40-44 age group: 3.15 children. However, the older generations bore a number of children that will probably not be equalled by the younger generations. Women born between 1901 and 1906 had 3.4 children; those born ten years earlier had had 4.1 children. Finally, those born before 1876 had had 4.5. It should be borne in mind that these are women who have been married and some amongst their number may have spent only a certain number of years in the married status. In this regard, it is interesting to compare the fertility of these women with the fertility of the women still living with their husbands. Here is the number of children born to women in each of these two categories:

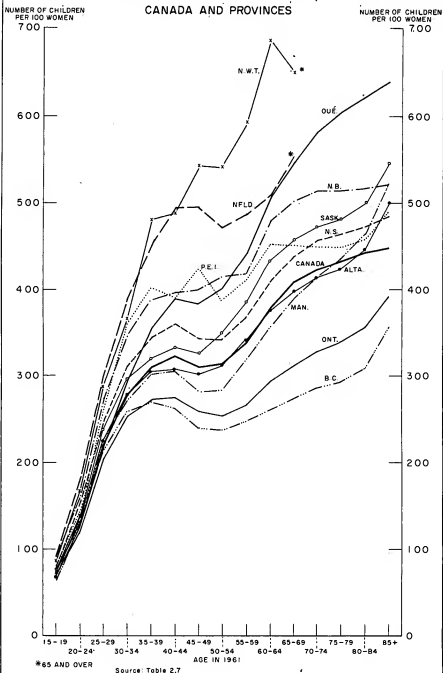
<u>Age in 1961</u>	<u>Women ever married</u>	<u>Women living with their husbands</u>
25-29 years	2.18	2.19
35-39 "	3.10	3.14
45-49 "	3.11	3.15
55-59 "	3.38	3.41

The differences are slight and do not exceed 1%.

We might now examine fertility by province. Except Québec, these rates can be easily classified (see Graph 2.12). At all ages, fertility is higher in the Maritimes than in Canada as a whole. Fertility in Newfoundland is the highest of all provinces up to the age of 65, but over the age of 65, Québec exceeds Newfoundland. Prince Edward Island and New Brunswick come next, with comparable rates, while Nova Scotia, though higher than Canada, comes close to Prince Edward Island and New Brunswick. The Prairie Provinces come next: in decreasing order of magnitude, Saskatchewan

GRAPH 2.12

NUMBER OF LIVE-BORN CHILDREN PER 100 WOMEN EVER MARRIED, ACCORDING TO THEIR AGE IN 1961, CANADA AND PROVINCES



is first, higher than Canada as a whole, then Alberta and Manitoba. The lowest fertility levels are Ontario and British Columbia. Québec cuts across the other provinces: up to the age of 28, fertility there is amongst the lowest. About the 28 years level, Québec's fertility exceeds that of Canada, Ontario, British Columbia and Manitoba. At 33 years, it has exceeded Saskatchewan, Alberta and Nova Scotia, attaining the Prince Edward Island and New Brunswick level around 54 years and finally surpassing Newfoundland at 63 years.

Interpreting these data is easy in the case of women over forty-five years of age, but the same is not true of the younger women. The problem arises more particularly in the case of Québec, where women marry later than they do elsewhere: the low fertility of Québec women under thirty does not mean that, in the long run, their completed fertility will be amongst the lowest in the country. It would seem that as they get older, Québec women tend to make up for the delay in childbearing that is due to their late marriages. Indeed, Québec women over thirty have more children than other Canadians of the same age:

There is also a considerable gap between the two provinces that are at the opposite extremities of the country: British Columbia and Newfoundland. If you divide the fertility of the latter by that of the former province, you get the following ratios: 1.26 at 15-19 years; 1.37 at 25-29 years; 1.67 at 35-39 years; 2.07 at 45-49 years; 1.95 at 60-64 years; after that age, Québec replaces Newfoundland. For women over 85, the ratio is 1.79. It would seem that, over the course of time, there is a widening and then a narrowing of the gaps between fertility levels. This phenomenon can be measured by taking all the provinces into account. We have calculated the average spread between the fertility of the provinces and that of Canada, for certain age groups. This average spread has then been divided by fertility for Canada, so as to take into account the level of fertility of various age groups. These are the results:

15-19 years.....	10.4%	55-59 years.....	19.9%
25-29 "	11.8%	65-69 "	16.6%
35-39 "	16.0%	75-79 "	15.2%
45-49 "	21.6%	85 years and over	12.6%

These results again confirm what has already been observed: over the course of the years, there is a trend towards amplification of the differences in behaviour, the maximum being reached with women in the 45-49 age group, most of whose children were born between 1930 and 1950. In the case of subsequent generations, behaviour patterns tended increasingly to converge, the relative gap going from 21.6% for women 45-49 to 10.4% for women of 15-19 years.

5. DISTRIBUTION BY NUMBER OF LIVE BIRTHS

Up to now, we have only examined average rates or numbers of children. However, even in the case of a clearly defined category of women, the average number results from a behaviour pattern that widely differs from one woman to another. To get some idea of this diversity or of this dispersion in behaviour patterns we must look at the distribution of women according to the number of children they have had. We shall first look at these distributions; we shall then measure the variety of behaviour patterns by using a coefficient of variation; finally, we shall measure the parity-progression ratios. We shall here limit ourselves to Canada and to the two provinces which are most widely divergent one from the other, from the fertility viewpoint, namely British Columbia and Québec.

In Table 2.8 can be found a percentage distribution of women ever married according to the number of children they have borne, for some five-year age groups. We have added the average number of live births. We should first of all observe the proportion of women who have had no children. It is obviously high in the case of women in the 15-19 age group (42.3% for the whole of Canada) and rapidly decreases to reach a minimum (9.1%) for the 35-39 age group. The fact that the proportion climbs up again after the age of 40 (15.4% at 55-59 years) means that the most recent generations include (or will include) very few infertile women, as compared to older generations. Obviously, there is nothing to ensure that women who, in 1961, were under 35 years of age, will be characterized by as low a percentage as 9.1%, but it can be concluded that such may indeed be the case. This phenomenon is about identical in the provinces of Québec and British Columbia.

We also note a similar development, from one generation to another, in the proportion of women ever married, who have borne only one child: this percentage is lower in the case of women aged 35-39 years than in the case of women 45-49 years or in the case of those aged 55-59 years. It therefore seems clear that families without children or with only one child are more and more infrequent in the younger generations than was the case for the older generations.

However, nothing indicates that large families tend to become an important factor again; the percentage representing families of six or more children becomes lower and lower as the younger replace the older generations. Thus 8.7% of the women over 65 years have borne 10 children or more, whereas only 3.7% of the women in the 45-49 age group have been this fertile. In British Columbia, the percentages are lower, but marked by the same pattern of change: 2.4% to 0.8%. The same development is evident in

Table 2.8 — Percentage distribution of women ever married, by number of live-born children, for selected age groups, Canada, British Columbia, and Québec, 1961

[illegible]

SOURCE: DBS, *Census of Canada, 1961*, Bulletin 4.1-7, Table G1.

Québec, but at a remarkably high level; amongst women ever married aged 65 years and over, one in five had borne ten children or more; this fraction was down to one woman in thirteen in the case of women in the 45-49 age group.

The evolution that has taken place in the distribution of women by number of children may be illustrated by comparing women in the 35-39 age group with women 65 years and over. Amongst the latter, for Canada as a whole, 40% have had two children or less, 33% have had from three to five children and 27% have had six children or more. Amongst women in the 35-39 age group, the corresponding percentages are 45%, 42.5% and 12.5%. Obviously, the fertility of women in the 35-39 age group is not completed and a certain number will have had more children before they are 50 years of age. Nevertheless, it seems clear that large families are tending to disappear and be replaced by families with three to five children. The figures could not be clearer: childless families and families with more than six children are on the way out, while there is a concentration of families with two to four children. With some variations, the same phenomenon is true of British Columbia and of Québec. By referring to Graph 2.13, a rather clear idea may be had of variations in the distribution of fertility levels, by age of women, as well as of the relative situation current in Canada and in the two provinces studied.

It is interesting to measure exactly the dispersion in the behaviour patterns related to the average number of children amongst women of different generations. We have calculated the standard deviation for women aged 35-39 years, 45-49 years and 65 years and over. This measure is an indication of dispersion in absolute values. To get an index of relative dispersion, divide the standard deviation by the average number of children: this ratio is called the coefficient of variation. In Table 2.9 these three figures will be found for the three age groups mentioned for Canada, British Columbia and Québec. Generally speaking, the standard deviation increases with fertility, as might have been expected. However, the coefficient of variation is intended to express fertility dispersion in relative values, that is to say by taking the average fertility level into account. We find that, in Canada and Québec, it is in the 45-49 age group that the widest dispersion appears, whereas in British Columbia the widest dispersion is amongst women aged 65 and over. It is quite possible, in fact, that the relative dispersion of fertility becomes higher as the level of fertility gets higher, and the coefficient of variation higher amongst women 65 and over than is the case amongst women in the 45-49 age group, even for Canada and Québec. The contrary conclusion reached in our study may simply be due to the fact that, as we had no information available, we had to overlook the dispersion in fertility involving more than ten children in a family.

GRAPH 2.13

PERCENTAGE DISTRIBUTION OF WOMEN EVER MARRIED,
BY NUMBER OF LIVE-BORN CHILDREN, FOR SELECTED AGE GROUPS,,
CANADA, BRITISH COLUMBIA, AND QUÉBEC, 1961

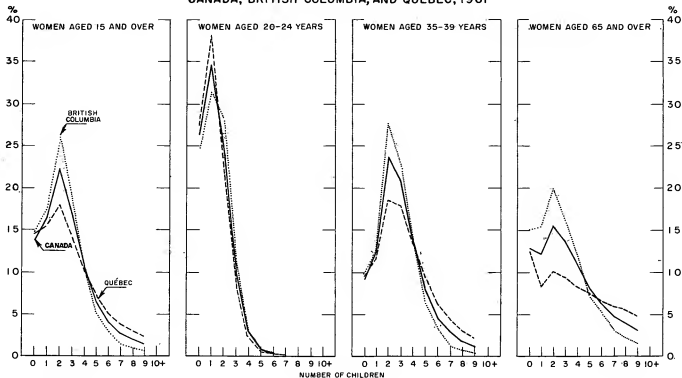


Table 2.9 – Average number of children per woman ever married, standard deviation, and coefficient of variation, for women aged 35-39, 45-49, and 65 and over, Canada, British Columbia, and Québec, 1961

Region and age group	Average number of children	Standard deviation	Coefficient of variation
Canada			
35-39 years.....	3.10	2.23	71.9%
45-49 "	3.11	2.71	87.1%
65 years and over.....	4.03	3.42	84.9%
British Columbia			
35-39 years.....	2.70	1.78	65.2%
45-49 "	2.39	1.90	79.5%
65 years and over.....	3.00	2.53	84.3%
Québec			
35-39 years	3.55	2.64	74.4%
45-49 "	3.84	3.36	87.5%
65 years and over.....	5.54	4.31	77.8%

Another interesting aspect of fertility is brought to light by the dispersions we have just examined. Of all the children born to a group of women, a certain fraction, sometimes considerable, are born to a relatively small proportion of these women. In Canada as a whole, for instance, slightly more than a quarter of the children born to women aged 65 and over in 1961, were born to less than 9% of these women (those who had had ten children and more). It is this aspect of fertility which Table 2.10 brings out. The information is given for women aged 35-39 years, 45-49 years, and 65 and over for Canada, British Columbia and Québec. The information bears on the percentage of children born to women who have had ten or more children, and to women who have had six or more children. A systematic study of these data shows that there is a marked relationship between the percentage of the most fertile women and the percentage of children born to these women, quite apart from the general fertility level and from the number of children from which these women are taken into consideration. Generally speaking, it may be said that:

5% of the most fertile women give birth to 17% of the children;
 10% " " " " " " " " 28% " " " " ;
 20% " " " " " " " " 48% " " " " ;
 30% " " " " " " " " 63% " " " " ;
 40% " " " " " " " " 74% " " " " .

This relationship may be represented by a non-linear curve from which the points would not be widely scattered. It is interesting to note up to what

Table 2.10 – Percentage of children born of women who have ten or more children, or six or more children, women ever married of selected age groups, Canada, British Columbia, and Québec, 1961

Region and age group	Women who have borne			
	10 or more children		6 or more children	
	% of women	% of women	% of women	% of women
Canada				
35-39 years	1.8	6.8	12.3	30.1
45-49 "	3.7	14.4	14.9	39.7
65 years and over...	8.7	26.1	26.6	58.2
British Columbia				
35-39 years	0.5	2.1	6.2	16.4
45-49 "	0.8	4.0	5.9	18.6
65 years and over...	2.5	9.5	14.4	37.7
Québec				
35-39 years	3.5	11.4	19.2	42.5
45-49 "	7.6	24.3	24.7	56.2
65 years and over...	20.5	46.6	43.4	77.0

SOURCE: DBS, *Census of Canada, 1961*, Bulletin 4.1-7, Table G1.

point each cohort of women digresses from a uniform transmittal of her own hereditary characteristics: half the children born to a given cohort of women are the children of one fifth of these women, namely, of the most fertile.

PARITY-PROGRESSION RATIOS

Amongst women who have just married, a certain proportion will bear at least one child; amongst those who have borne one child, a certain number will bear at least two, etc.; these proportions are called *parity-progression ratios* from 0 to 1 child, 1 to 2 children, from 2 to 3 children, etc. These ratios can be calculated from the distribution of women by the number of children they have had. Obviously, these ratios cannot be considered as definite except in the case of women who are beyond the child-bearing age. But it is interesting to know what these figures are even in the case of the women who are not beyond the childbearing stage.¹⁷

Table 2.11 gives parity-progression ratios from 0 to 1 child (a_0), from 1 to at least 2 children (a_1), --- from 5 to at least 6 children (a_5). They have

¹⁷Parity-progression ratios are sometimes calculated for a given interval, for instance, the ratio indicating the likelihood for women, who have already had one child, of bearing at least a second in the course of the year following the birth of the first. The data we have are not such as to enable us to make this calculation.

Table 2.11 – Parity-progression ratios for selected age groups, Canada, British Columbia, and Québec, 1961

Age group and region	Parity-progression ratios ^a					
	a_0	a_1	a_2	a_3	a_4	a_5
20-24 years						
Canada	0.737	0.530	0.363	0.293	0.265	0.300
British Columbia	0.753	0.583	0.355	0.265	0.275	0.307
Québec	0.727	0.474	0.340	0.289	0.265	0.311
25-29 years						
Canada	0.864	0.757	0.557	0.467	0.433	0.431
British Columbia	0.850	0.781	0.544	0.413	0.364	0.407
Québec	0.864	0.732	0.554	0.487	0.463	0.460
35-39 years						
Canada	0.908	0.864	0.698	0.620	0.597	0.606
British Columbia	0.902	0.856	0.645	0.534	0.480	0.487
Québec	0.904	0.873	0.764	0.700	0.679	0.669
45-49 years						
Canada	0.869	0.826	0.687	0.659	0.666	0.688
British Columbia	0.855	0.793	0.580	0.530	0.513	0.556
Québec	0.861	0.853	0.773	0.759	0.758	0.758
65 years and over						
Canada	0.872	0.861	0.794	0.769	0.762	0.766
British Columbia	0.850	0.819	0.712	0.675	0.648	0.667
Québec	0.874	0.905	0.873	0.862	0.860	0.851

^a The expression a_0 designates the parity-progression ratio from 0 to at least one child; a_1 , from 1 to at least 2 children—, etc.

SOURCE: Table 2.8.

been worked out for certain age groups, for Canada, British Columbia and Québec. The following phenomena should be noted:

(a) Generally speaking, a increases with the age of women; however, a_0 , a_1 , and a_2 decrease as you pass from the 35-39 age group to the 45-49 age group (excepting a_2 for Québec).

(b) Parity-progression ratios show a decreasing value as the birth order increases. The decrease is rapid in lower age groups. For women aged 20-24 years throughout Canada, $a_0 = 0.737$, and $a_5 = 0.300$. The drop is much more gradual in the case of women aged 65 and over: $a_0 = 0.872$ and $a_5 = 0.766$. In fact, for women aged 35 and over, the magnitude of a hardly drops at all and even rises after the third order.

(c) The relative position for the three regions varies. In the younger age groups, Québec is characterized by figures of relatively low value, except in the case of high birth orders. On the other hand, figures are high in

the case of British Columbia, for a_0 and a_1 , in these same age groups. Beyond 35 years, Québec is characterized by high figures and British Columbia by low figures. This is very much the case for women over 45 years of age, and for high birth orders. The case of Québec women aged over 65 should be pointed out more particularly — here a remains between 0.85 and 0.90. This means that about nine tenths of the women who have had a child, whatever the birth order of that child, have had another later. In this particular case, we have calculated the figures from a_6 to a_9 and found them to drop very gradually so that a_9 equals 0.807.

OVERVIEW

Amongst the countries that have shared in the development of technological progress, over the course of the past century, Canada stands out by virtue of its high birth rate. This country has closely followed the same movements as in the United States, but has maintained a constant surplus. Since the mid-nineteenth century, the fertility of all women in the 15-50 age group has declined by about one-half: on the average, each woman bore about seven children a hundred years ago; today, this number has reduced to around 3.5. However, this reduction is far from being the same for all ages from 15 to 50; women under 25 years of age are more fertile today than were their ancestors of a century ago; it is therefore beyond the age of 25 that the decrease in fertility has made itself felt. This change is not particular to Canada.

Provided our calculations are not too far remote from reality, legitimate fertility seems to have been as high amongst Canadian women in 1870 as it was amongst Canadian women at the outset of the eighteenth century; and in this latter century, the rate was one of the highest known to history. It would seem that the onset of the secular fertility decline took place at about the same time, as in most of the western European countries, that is to say around 1875. Between the latter date and 1940, it was cut by about three-fifths and today is about the same as it was in 1940.

Thanks to census information, it is possible to examine the behaviour of female cohorts who have married. Those born before 1876 and who were still living in 1941 had 4.8 children on the average. This figure dropped to 3.5 in the case of women born between 1911 and 1916 and has somewhat increased with subsequent generations. A fertility level of this nature greatly exceeds (by a third roughly) the fertility essential to maintenance of the population.

The fertility patterns across Canada are far from being the same everywhere. From this viewpoint, we should particularly take note of the

wide divergences in behaviour patterns up until around 1920, then an amazing convergence from that date to the present.

Fertility patterns analysed in this chapter are the resultant of a number of demographic factors: age distribution, nuptiality, legitimate and illegitimate fertility. To interpret the variations in fertility, it is essential to measure the role played by each of these factors and this is what we will attempt to do in the next chapter.

Chapter 3

INFLUENCE OF CERTAIN DEMOGRAPHIC FACTORS ON THE VARIATIONS IN GENERAL FERTILITY

The fertility variations for women in the childbearing ages depend upon four immediate factors of demographic character; the age distribution of women between 15 and 49, nuptiality, fertility of married women and illegitimate fertility. A change in one or the other of these factors leads to a change in the general fertility rate, that is to say, in the relationship of births to women in the 15-49 age group. Any interpretation of variations in fertility must derive, in so far as possible on a proper estimate of the roles played by each of these four factors. In practice, we can overlook factors that do not change, or that change slightly, as well as those that are relatively unimportant. A case in point is illegitimate fertility which only accounts for 5% of all births, and for which the slow variations do not greatly weigh in explaining the great variations we observed in the previous chapter.

In this chapter, we shall attempt to assess the role of the four factors listed in influencing changes in fertility patterns over the course of the last hundred years. No account of illegitimate fertility before 1921 can be taken because there are no figures available, prior to this year. Illegitimate births surely did not exceed 2% of the total number of births throughout Canada and we have therefore treated all births prior to 1921 as legitimate births. After that date, the effect of changes in illegitimate fertility on changes in fertility in general have been very summarily treated.

The method we used is fully explained in Appendix G. In measuring variations, either in general fertility or in one of the factors, we used ratios that are best indicated by the following example: for Canada¹ as a

¹Newfoundland excluded.

whole, between 1951 and 1961, the general fertility rate varied from .1092 to .1115; and if you divide the 1961 rate by the 1951 rate, you get the ratio 1.0211, and this indicates that the rate increased by 2.11% during this period. This ratio is symbolized by the letters V_T . Analogous ratios have been used to measure the changes in fertility which can be attributed to each factor. We used the following symbols:

- V_T - ratio measuring the effect of variations of the four factors;
- V_A - ratio measuring the effect of variations in age distribution;
- V_N - ratio measuring the effect of variations in nuptiality;
- V_L - ratio measuring the effect of variations in legitimate fertility;
- V_I - ratio measuring the effect of variations in illegitimate fertility.

To simplify the presentation of the results of this analysis, we shall not use the V ratios that we have just listed and which were used in the calculations. It seemed to us simpler to represent the variations in fertility and its factors in the form of rates of increase (positive or negative). This means that instead of saying that the effect of such and such a factor, between 1941 and 1951 for instance, is represented by the ratio 1.04, we say that the variations in this factor have increased fertility by 4%. The analysis, of which the results are given here, attempts to answer two questions: (a) the fertility of women aged 15-49 years in a given region having varied by $x\%$, between the year 0 and the year 1, what was the part played by each factor in the change; (b) what is the part played by these same factors in the differences in fertility found in any given year, between a given province and Canada.

1. FACTORS OF TIME VARIATIONS IN FERTILITY

The changes in fertility brought about by changes in one factor or the other, as well as the total variation appear in Table 3.1, expressed in percentages. We might illustrate their significance by examining the case for Canada, for the 1871-1891 period. During this period, general fertility declined by 23.56%. This drop can be attributed to forces that played one against the other: changes in age distribution should have increased fertility by 1.38%, but the changes in nuptiality caused it to drop by 2.77% and changes in legitimate fertility brought about a 22.17% change. We should remember that before 1921, estimates used in these calculations are very much open to question, particularly in so far as total variations and changes in legitimate fertility are concerned. It will be noted, on the other hand, that no major error is made in supposing that, prior to 1921, the changes in illegitimate fertility played no major role: mensuration of this factor rarely exceeds 1%, after 1921. The percentages in Table 3.1 are

represented in Graph 3.1. Two periods can be clearly differentiated one from the other in so far as the relative importance of the different factors is concerned: these periods are the one prior to and the one subsequent to 1941.

THE PERIOD 1851-1941

It is the drop in legitimate fertility which is the most important factor, until 1941. This is true for Canada, for each province and all periods with but four exceptions: from 1851 to 1871, in Ontario and Québec, the increase in legitimate fertility would seem to have been lower than the decrease resulting from the drop in nuptiality; between 1911 and 1921, in Québec, the reduction in nuptiality was greater than the decrease in fertility; finally between 1931 and 1941, in British Columbia, there was an increase in legitimate fertility (the case is unique), but nonetheless smaller than that resulting from the increase in nuptiality. In Canada as a whole, it was over the decade 1911-1921 that the drop in legitimate fertility was highest (18.2%); the following decade comes next (14.0%). The periods 1871-1891 and 1931-1941 were marked by reductions of the order of 12% per decade. But this pattern is far from applicable to each province. For instance, in Nova Scotia and Saskatchewan, the reduction was not very marked during the 1921-1931 period; the drop was quite high in Ontario between 1931 and 1941 (19.9%) and finally the decrease in legitimate fertility was only very slight in Québec until 1921.

Variations in nuptiality sometimes exercise a very marked influence. It would seem that the proportion of married women was markedly reduced, in Ontario and Québec, between 1851 and 1871. This drop persisted, in Ontario, over the course of the next period (1871-1891). The period 1891-1911 is characterized by a rather pronounced increase in nuptiality (9%) in Canada, except for Québec and the Western Provinces. This pattern continues, with some slight decreases over the course of the next ten years (1911-1921). The following decade is marked by a noticeable drop in nuptiality (from 5 to 10%), except in Nova Scotia and Ontario. There is no particularly pronounced pattern between 1931 and 1941: nuptiality increases in Nova Scotia, Ontario, Manitoba and British Columbia, but drops in Québec and Saskatchewan. For Canada, as a whole, it remains quite stable.

The part played by variations in age distribution of the women in the 15 to 49 age groups is much less significant. The effect of the variations is as frequently positive as it is negative and, of the 33 cases that arise between 1851 and 1941, the variation in fertility resulting from variations in

Table 3.1 – Influence of age distribution, nuptiality, legitimate fertility, and illegitimate fertility on the variations of general fertility, Canada and selected provinces, 1851 to 1961

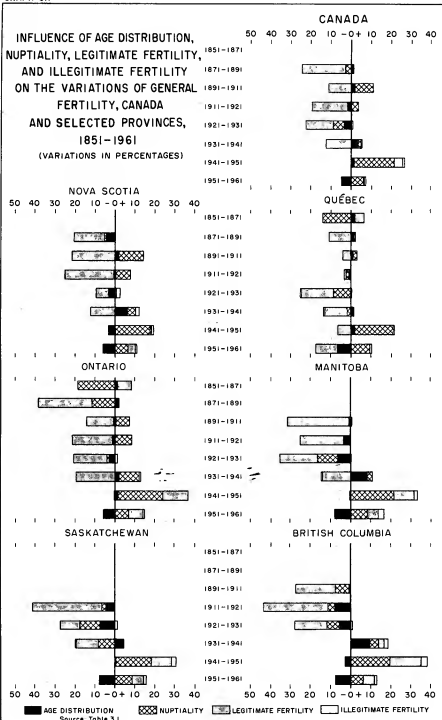
(Variations in percentages)

NOTE: The percentages in this table represent the part played by each factor in relative variations in the fertility of women aged 15-49 years. The age distribution is that of women 15-49 years and the nuptiality designates the proportion of married women in various age groups included between 15 to 50 years. The percentages have been adjusted so that their algebraic total will equal the total variation in fertility.

Region and factor of variation	Period							
	1851-1871	1871-1891	1891-1911	1911-1921	1921-1931	1931-1941	1941-1951	1951-1961
Canada								
Age distribution.....	-	1.38	1.55	- 1.64	- 3.16	3.31	1.05	- 5.08
Nuptiality	-	- 2.77	9.00	3.72	- 5.66	1.46	19.98	6.22
Legitimate fertility	-	-22.17	-11.16	-18.16	-14.03	-12.47	4.24	0.40
Illegitimate fertility	-	-	-	-	0.53	0.22	0.83	0.57
Total	-	-23.56	- 0.61	-16.08	-22.32	- 7.48	26.10	2.11
Nova Scotia								
Age distribution.....	-	- 4.52	1.85	- 0.52	- 2.99	5.85	- 3.12	- 6.03
Nuptiality	-	- 0.79	12.51	7.75	0.63	4.42	17.87	6.45
Legitimate fertility	-	-15.39	-21.15	-25.14	- 6.36	-12.32	0.78	3.70
Illegitimate fertility	-	-	-	-	1.98	1.44	0.74	0.37
Total	-	-20.70	- 6.79	-17.91	- 6.74	- 0.61	16.27	4.49
Québec								
Age distribution.....	1.68	1.37	0.84	- 1.17	0.09	1.49	1.61	- 6.65
Nuptiality	-14.08	0.37	1.93	- 1.61	- 8.79	- 2.20	19.45	9.77
Legitimate fertility	4.40	-11.12	- 4.17	- 0.89	-15.87	-11.07	- 6.62	-10.81
Illegitimate fertility	-	-	-	-	- 0.48	- 0.36	0.46	0.35
Total	- 8.00	- 9.38	- 1.40	- 3.67	-25.05	-12.14	14.90	- 7.34

Ontario									
Age distribution.....	1.09	2.07	- 0.47	- 1.35	- 2.85	2.02	1.71	-5.91	
Nuptiality	-18.40	-11.67	7.10	8.71	- 1.22	10.36	22.38	6.94	
Legitimate fertility	7.38	-27.06	-13.80	-20.02	-16.85	-19.92	12.59	7.10	
Illegitimate fertility	-	-	-	-	1.12	0.54	- 0.14	0.39	
Total	- 9.93	-36.66	- 7.17	-12.66	-19.80	- 7.00	36.52	8.52	
Manitoba									
Age distribution.....	-	-	0.34	- 3.05	- 6.21	8.45	- 0.13	-8.05	
Nuptiality	-	-	- 0.47	- 0.02	-10.25	2.07	21.35	8.75	
Legitimate fertility	-	-	-30.85	-21.99	-19.01	-14.39	10.45	5.04	
Illegitimate fertility	-	-	-	-	0.03	- 0.34	1.58	2.42	
Total	-	-	-30.98	-25.06	-35.44	- 4.21	33.25	8.16	
Saskatchewan									
Age distribution.....	-	-	-	- 4.63	- 7.33	4.69	0.02	-7.58	
Nuptiality	-	-	-	- 1.98	-10.41	- 8.32	18.47	8.80	
Legitimate fertility	-	-	-	-34.61	- 9.64	-11.50	9.94	5.33	
Illegitimate fertility	-	-	-	-	1.14	- 0.05	2.26	1.61	
Total	-	-	-	-41.22	-26.24	-15.18	30.69	8.16	
British Columbia									
Age distribution.....	-	-	- 0.59	- 7.64	- 5.59	9.85	- 2.96	-7.81	
Nuptiality	-	-	- 7.02	- 3.58	- 6.32	3.93	19.44	6.81	
Legitimate fertility	-	-	-19.61	-32.15	-15.72	2.80	15.56	5.18	
Illegitimate fertility	-	-	-	-	0.88	2.25	3.07	1.08	
Total	-	-	-27.22	-43.37	-26.75	18.83	35.11	5.26	

GRAPH 3.1



this factor runs less than 3% in 20 cases, between 3% and 5% in six other cases while the seven remaining cases reflect a variation between 5% and 10%.

THE PERIOD 1941-1961

In contrast to the preceding period, it was undoubtedly the fluctuations in nuptiality which most affected the fluctuations in fertility, particularly between 1941 and 1951. The effect of these fluctuations is always a positive one, namely to increase fertility. Note that where this effect was slightest, namely in Nova Scotia, it nonetheless brought about a 17.9% change and where the effect was highest (Ontario), the result was a 22.4% change. Generally speaking, increase in nuptiality accounts for three-quarters of the rise in fertility observed between 1941 and 1951 — a 26.1% rise for Canada as a whole. Between 1951 and 1961, the increase in fertility due to fluctuations in nuptiality was much less (6.2% for Canada), but the latter continued to be the predominant factor notwithstanding three exceptions: in Québec, the effect of nuptiality (9.8%) was more than compensated by a drop in legitimate fertility (-10.8%); in Ontario, the effect of legitimate fertility (7.1%) was more important than that of nuptiality; finally, in British Columbia, the effect of the rise in nuptiality (6.8%) was more than compensated by age distribution (-7.8%).

The effect of variations in legitimate fertility is not to be overlooked. Except for Québec, it is always positive: the figure oscillates between 0.8 and 15.6% for the 1941-1951 period and between 0.4 and 7.1% for the 1951-1961 period. But for this latter period, the reduction in legitimate fertility for Québec is still higher, namely -10.8%. For the whole of Canada, the effect of this factor is 4.2% for the first decade and 0.4% for the second decade.

Variations in age distribution of which the effect was negligible between 1941 and 1951, bring fertility down by 5% to 8% between 1951 and 1961. This is the only period in which the effect of this factor is of such importance. This phenomenon is due to the fact that in 1961, the women who have the highest fertility (those aged between 20 and 30) belonged to a low birth rate generation born during the thirties. For the whole of Canada, this variation in age distribution reduces fertility by 5.1% and constitutes the factor which accounts for the most important change, save for nuptiality (6.2%).

The part played by illegitimate fertility is not a major one — seldom exceeding 1%; on the other hand, the effect is always positive except in Ontario between 1941 and 1951. This is probably due to the new definition

of illegitimate births adopted by this province during the decade in question: the new definition definitely underestimates illegitimate births as compared to the definition that has been retained everywhere else.

It is important to point out that this analysis is, from some viewpoints, open to question inasmuch as it seeks to attribute to one factor or another the responsibility for variations in the fertility of women as a whole. The procedure assumes that the factors are independent one of another and that, for instance, if there were a change in one factor, the remaining factors would remain unaffected. This may be true in some cases, but it is probable that two sets of factors, particularly, are not independent. In the first place, illegitimate fertility is probably not independent of nuptiality, an increase in the latter tending to reduce the former. In this regard, it is noticeable that despite the high increase in nuptiality since 1941, the rate of illegitimate fertility should have continued to increase. In the second place – and this is a much more important phenomenon – there is an interdependence between changes in nuptiality and in the legitimate fertility rate, since there is mutual compensation between these factors, to some extent. An example: over the last twenty years, nuptiality has substantially increased and with it the proportion of married women, aged between 15 and 25 years. These women will not necessarily have more children during their lifetime, so much so that legitimate fertility rates will decrease after 25 years. Indeed, many women, before they reach the age of 25, will have borne through precocious marriages, the children they would have borne after 25, had they married later – assuming that the completed fertility did not change. This shows therefore that these two factors tend to compensate one another. One may object that this did not happen, since these two factors produced positive results, in most cases, between 1941 and 1961. There were two reasons for this: first of all, for compensation to take place, there must be a certain time lapse; furthermore, the completed cohort fertility has in fact increased, as was noted in the previous chapter. It may be that in a case like this, the compensation will not appear.

CUMULATIVE VARIATIONS

It is interesting to note how, over the course of time, Canada and the provinces have evolved as far as the four phenomena that we have been studying (age distribution, nuptiality, legitimate and illegitimate fertility) are concerned, by cumulating the variations in successive periods. This gives some idea of the situation in a given province, at a given time, in relation to the point of departure. This point of departure will be 1871 for Canada, Nova Scotia, Québec and Ontario. For the other three provinces,

information is only available from a later date of departure: 1891 for Manitoba and British Columbia and 1911 for Saskatchewan. The procedure we have used to cumulate these successive variations consists in transforming the rates of variation into ratios (for instance a 3% increase becomes 1.03) and in multiplying successive ratios for a given phenomenon. Thus, we get a form of index giving, for different years, the level of a phenomenon in relation to the base year.

In Table 3.2 and Graph 3.2, in which results have been drawn up, the base year is given the value of 100. Age distribution in the Western Provinces rapidly deviated from its point of departure — one which had been exceptionally favourable. After a favourable movement in 1941 and 1951, these provinces returned, in 1961, more or less to the situation in which they had been in 1931. The other provinces did not depart by more than 5% from their situation at take-off, except in the case of Nova Scotia in 1931 (93.8) and 1961 (90.4).

Nuptiality has been subjected to variations of a much greater importance. In Canada as a whole, after a slight decline in 1891 (97.2) there is a recovery bringing the index to 109.9 in 1921. The index drops again (105.2 in 1941) and then increases rapidly: 126.2 in 1951 and 134.1 in 1961. Nova Scotia and Ontario are the only provinces where the index has not dropped to any significant extent since 1891. Indeed, the indices for these provinces were the highest in 1961: 158.6 for Nova Scotia and 146.7 for Ontario. Nuptiality in the other provinces, which had not greatly changed prior to 1921 (except for a major drop in British Columbia) remained at a low level in 1931 and 1941 (from 8 to 20% lower than at the point of departure) and then recovered to bring the 1951 index to a level above that at the departure point, for all provinces except Saskatchewan. The latter figure is over 100 for 1961. All provinces we examined therefore manifested a more favourable nuptiality in 1961 than had been the case in the base year.

The pattern is much more continuous in the case of legitimate fertility: the decline is almost constant. In 1921, Canada reaches an index of 56.6; the index for the provinces is between 50 (Nova Scotia and Ontario) and 84.4 (Québec). The minimum is reached in 1941, except for British Columbia, which had reached it in 1931, and Québec, where the index continues to drop until 1961. Except for this latter province, the index increases again between 1941 and 1961. In 1961, legitimate fertility in all provinces had dropped by more than 40% in comparison to the base year. That of Canada had decreased by 55%; the highest relative drop was that of Ontario: 60%.

Table 3.2 – Index of cumulative variations of age distribution, nuptiality, legitimate fertility, and illegitimate fertility, Canada and selected provinces, 1871 to 1961

(Base year^a = 100)

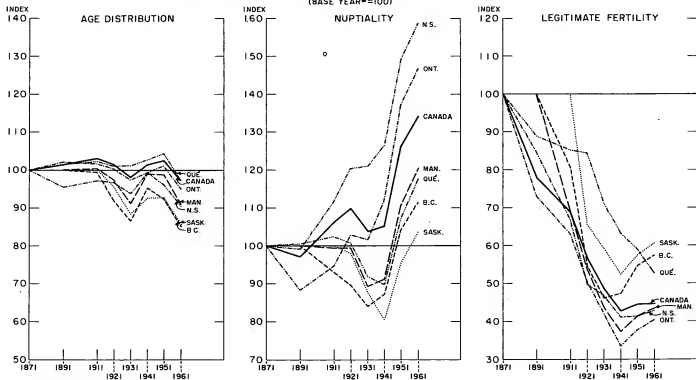
Factor of variation and province	1871	1891	1911	1921	1931	1941	1951	1961
Age distribution								
Canada	100.0	101.4	103.0	101.3	98.1	101.3	102.4	97.2
Nova Scotia	100.0	95.5	97.2	96.7	93.8	99.3	96.2	90.4
Québec	100.0	101.4	102.2	101.0	101.1	102.6	104.3	97.3
Ontario	100.0	102.1	101.6	100.2	97.4	99.3	101.0	95.1
Manitoba	—	100.0	100.3	97.3	91.2	99.0	98.8	90.9
Saskatchewan	—	—	100.0	95.4	88.4	92.5	92.6	85.5
British Columbia	—	100.0	99.4	91.8	86.7	95.2	92.4	85.2
Nuptiality								
Canada	100.0	97.2	106.0	109.9	103.7	105.2	126.2	134.1
Nova Scotia	100.0	99.2	111.6	120.3	121.0	126.4	149.0	158.6
Québec	100.0	100.4	102.3	100.7	91.8	89.8	107.2	117.7
Ontario	100.0	88.3	94.6	102.8	101.6	112.1	137.2	146.7
Manitoba	—	100.0	99.5	99.5	89.3	91.1	110.6	120.3
Saskatchewan	—	—	100.0	98.0	87.8	80.5	95.4	103.8
British Columbia	—	100.0	93.0	89.6	84.0	87.3	104.2	111.4
Legitimate fertility								
Canada	100.0	77.8	69.1	56.6	48.6	42.6	44.4	44.6
Nova Scotia	100.0	84.6	66.7	49.9	46.8	41.0	41.3	42.8
Québec	100.0	88.9	85.2	84.4	71.0	63.2	59.0	52.6
Ontario	100.0	72.9	62.9	50.3	41.8	33.5	37.7	40.4
Manitoba	—	100.0	69.2	53.9	43.7	37.4	41.3	43.4
Saskatchewan	—	—	100.0	65.4	59.1	52.3	57.5	60.6
British Columbia	—	100.0	80.4	54.5	46.0	47.3	54.6	57.4
Illegitimate fertility								
Canada	—	—	—	100.0	105.3	100.8	101.6	102.2
Nova Scotia	—	—	—	100.0	102.0	103.4	104.2	104.6
Québec	—	—	—	100.0	99.5	99.2	99.6	100.0
Ontario	—	—	—	100.0	101.1	101.7	101.5	101.9
Manitoba	—	—	—	100.0	100.0	99.7	101.3	103.7
Saskatchewan	—	—	—	100.0	101.1	101.1	103.4	105.0
British Columbia	—	—	—	100.0	100.9	103.2	106.3	107.5

^a The base year is not the same in all cases.

Illegitimate fertility has increased in all the provinces, since 1921, except in Québec, where it has remained stable. The highest index, in 1961, is for Saskatchewan (105.0). We should note the significance of these indices. They represent the evolution of each phenomenon *to the extent that the variations in the phenomenon involved affect the fertility of all women*. For instance, a nuptiality index of 140 does not mean that the proportion of married women has increased by 40% at all ages, but that this phenomenon has varied in such a way that the fertility of all women has increased by 40%.

INDEX OF CUMULATIVE VARIATIONS OF AGE DISTRIBUTION, NUPTIALITY, AND LEGITIMATE FERTILITY, CANADA AND SELECTED PROVINCES, 1871 TO 1961

(BASE YEAR*=100)



*THE BASE YEAR IS NOT THE SAME IN ALL CASES.

Source: Table 3.2

The coherence of this analysis can be checked. By multiplying one by the other the indices for the four factors, for a given year and given region, we should obtain more or less the index that measures variations in over-all general fertility. For Canada, in 1961, the product of the indices of the four factors is equal to .593;² the index for total fertility (which does not appear in Table 3.2) is .590, which represents a relative difference of 0.5%. The difference is therefore very small and the same is true for the provinces of Ontario and Québec, where the analogous difference is respectively 1.1% and 0.2%. For the four other provinces, the relative difference is higher: Nova Scotia: 5.9%; Manitoba: 6.7%; Saskatchewan: 8.6%; British Columbia: 14.8%. The following are the comparative figures for each province:

	Successive products of ratios measuring variations in general fertility	Product of indices of the four factors in Table 3.2 in 1961
Nova Scotia ....	.6832	.6428
Québec .....	.6035	.6026
Ontario .....	.5676	.5740
Manitoba .....	.4609	.4918
Saskatchewan ..	.5199	.5644
British Columbia	.5101	.5856

We believe that, as a whole, these results confirm the validity of our analysis, even though the analysis may not be rigorously exact.

SOME EXPLANATORY REMARKS

We may wonder why the diverse phenomena whose effect on fertility we have just measured should have varied in the course of time. Two of these factors in particular merit our attention: nuptiality and legitimate fertility. We do not claim to give here a full explanation of these variations: what we intend to do is to see whether the variations in nuptiality and legitimate fertility are related to variations in other phenomena.

It would seem that variations in nuptiality are related to the economic situation, and this has been observed in a number of populations. We shall only verify in a summary manner this relationship. Nuptiality in 1891 was lower than 1871;³ now, according to W.L. Thorp,⁴ the year 1871 was

²To obtain the products, the indices have obviously been brought back to a base equal to unity.

³See Table 3.1.

⁴W.L. Thorp and W.C. Mitchell, *Business Annals*, New York, National Bureau of Economic Research, 1926, pp. 300-307.

preceded by ten or so odd years of economic prosperity, and the years 1882-1891 were, generally speaking, depression years. On the other hand, between 1891 and 1911, there is a recovery in nuptiality. The year 1911 was preceded by some fifteen years of prosperity which were only broken by the 1907-1908 depression. Nuptiality increased again between 1911 and 1921, and the latter year was preceded by economic conditions that were exceptionally favourable. Between 1921 and 1931, nuptiality dropped and this coincided with the onset of the major economic crisis which began in 1929. There is some doubt, however, as to whether the fraction of women married in 1931 may have been seriously affected by the crisis. The recovery of nuptiality was rather small, between 1931 and 1941, the prosperity of the war years probably not yet having made itself felt, except perhaps in Ontario, where nuptiality was markedly higher in 1941 than in 1931.

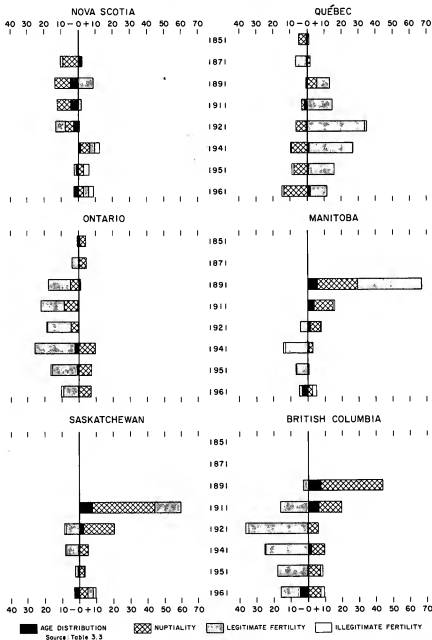
The economic prosperity which accompanied and followed the last war brought about a marked rise in nuptiality, although neither in Canada, nor in any province did it reach the high proportions of married women found in the United States. Clearly, other factors have also been responsible for the high rise in nuptiality, amongst which the greater freedom of young people and the increasing possibilities, due to contraception, of dissociating marriage from family responsibilities that result therefrom.

It is more difficult to associate the secular drop in legitimate fertility with exact and measurable phenomena. It is thought, indeed, that industrialization and urbanization and particularly, the changes in mentality that went hand in hand with these changes were amongst these phenomena. But, in every case, these were continuous patterns of change and not just fluctuations. It seemed to us of interest to see whether the highest declines in legitimate fertility were associated with the highest increases in urbanization. To characterize the latter phenomenon, we used two indices: the proportion of the population living in incorporated municipalities and the proportion of the population living in cities of more than 30,000 inhabitants. There seems not to be any link between the intensity of the variations in legitimate fertility and the percentage increases in one type of urban population or another. This does not mean that there is no link between these two phenomena; it would seem that other phenomena intervene and conceal the expected relationship. Fluctuations in economic conditions have certainly played an important part as have the widespread use of contraceptive methods.

GRAPH 3.3

INFLUENCE OF AGE DISTRIBUTION, NUPTIALITY, LEGITIMATE FERTILITY,
AND ILLEGITIMATE FERTILITY ON THE DIFFERENCE BETWEEN
THE GENERAL FERTILITY OF SELECTED PROVINCES
AND THAT OF CANADA, 1851 TO 1961

(VARIATIONS IN PERCENTAGES)



FACTORS OF TIME VARIATIONS IN FERTILITY

Table 3.3 – Influence of age distribution, nuptiality, legitimate fertility, and illegitimate fertility on the difference between the general fertility of selected provinces and that of Canada, 1851 to 1961

(Variations in percentages)

Province and factor of variation	1851	1871	1891	1911	1921	1941	1951	1961
Nova Scotia								
Age distribution	—	2.05	- 4.58	- 4.25	- 2.74	1.34	- 1.17	- 2.46
Nuptiality	—	-9.01	- 8.96	- 7.91	- 4.71	5.36	3.22	3.06
Legitimate fertility	—	-1.17	8.86	1.55	- 5.52	2.83	- 1.21	3.07
Illegitimate fertility	—	—	—	—	0.44	3.29	3.19	2.79
Total	—	-8.13	- 4.68	-10.61	-12.53	12.82	4.03	6.46
Québec								
Age distribution	-0.74	-0.75	- 0.82	- 1.37	- 0.74	0.87	0.66	2.22
Nuptiality	-4.25	1.71	5.69	- 1.68	- 5.87	- 9.07	- 8.43	-13.31
Legitimate fertility	1.00	-5.74	8.02	15.05	34.13	26.30	15.49	9.52
Illegitimate fertility	—	—	—	—	1.03	- 0.32	- 0.39	- 1.03
Total	-3.99	-4.78	12.89	12.00	28.55	17.78	7.33	- 2.60
Ontario								
Age distribution	0.65	0.04	1.04	- 0.65	- 0.08	- 2.19	- 0.66	- 0.14
Nuptiality	3.98	4.67	- 4.70	- 7.77	- 4.23	9.84	7.58	7.43
Legitimate fertility	-0.64	-3.74	-12.67	-13.43	-13.92	-23.24	-14.68	- 8.81
Illegitimate fertility	—	—	—	—	- 0.44	0.00	- 0.85	- 1.35
Total	3.99	-0.97	-16.33	-21.85	-18.67	-15.39	- 8.61	- 2.87
Manitoba								
Age distribution	—	—	5.92	3.80	1.85	0.81	- 0.07	- 3.05
Nuptiality	—	—	23.67	11.22	5.92	2.26	0.84	2.73
Legitimate fertility	—	—	37.67	1.12	- 4.17	-12.74	- 6.28	- 1.87
Illegitimate fertility	—	—	—	—	0.13	- 1.07	- 0.17	2.10
Total	—	—	67.26	16.14	3.73	-10.74	- 5.68	- 0.09
Saskatchewan								
Age distribution	—	—	—	7.93	2.68	- 0.27	- 0.85	- 2.76
Nuptiality	—	—	—	33.51	17.80	5.29	2.80	4.87
Legitimate fertility	—	—	—	18.37	- 7.77	- 6.99	- 1.44	3.19
Illegitimate fertility	—	—	—	—	- 0.76	- 0.57	0.50	1.70
Total	—	—	—	59.81	11.95	- 2.54	1.01	7.00
British Columbia								
Age distribution	—	—	7.28	6.41	- 0.17	1.68	- 0.12	- 4.98
Nuptiality	—	—	36.67	13.18	6.19	7.81	6.96	7.30
Legitimate fertility	—	—	- 2.73	-16.17	-34.76	-24.88	-17.92	-11.03
Illegitimate fertility	—	—	—	—	- 1.47	- 0.08	1.65	2.07
Total	—	—	41.22	3.42	-30.21	-15.47	- 9.43	- 6.64

NOTE: See note above Table 3.1.

2. FACTORS AFFECTING THE DIFFERENCE IN FERTILITY BETWEEN CANADA AND THE PROVINCES

The same type of analysis can be used, not as previously to explain variations in a population's fertility over a given period of time, but to explain the difference in the fertility rates from one population to another in a given year. For instance, in 1921, Nova Scotia had a general fertility rate that ran 12.5% lower than for the rest of Canada. The contribution made by each of the four factors to this total difference can be measured. We have applied this type of analysis to fertility differences between each of the six selected provinces and Canada, for the years 1851, 1871, 1891, 1911, 1921, 1941, 1951 and 1961. The results appear in Table 3.3 and Graph 3.3. They are presented in the same way as for the variations, over a period of time, that were studied in the preceding section. We shall now examine each province in turn.

1. NOVA SCOTIA – This is the province where age distribution is the most unfavourable, but its effect on fertility does not exceed -5%. Nuptiality is particularly low until 1911 (-8 to -9%). This is still an unfavourable factor by 1921, but starting from that year, it is in Québec that nuptiality is most unfavourable. From 1941 onwards, nuptiality in Nova Scotia is more favourable (3.1 to 5.3%) than for Canada as a whole. Legitimate fertility, noticeably higher than for Canada as a whole in 1891 (8.9%) ceases to play the predominant role thereafter except in 1921, when it tends to decrease fertility by 5.5%. Illegitimate fertility has been higher in this province than in any of the other provinces, since 1941. As a whole, the fertility rate for Nova Scotia is lower than for Canada until 1921, particularly in view of its low nuptiality; nevertheless, it later becomes higher because of the influence of diverse factors.

2. QUÉBEC – Age distribution is not widely different from that for Canada, and plays a negligible role, except in 1961 (2.2%). Nuptiality, on the other hand, does have a very important influence. It tends first of all to become more and more favourable until 1891 (5.7%); in 1911, it is less favourable than for Canada as a whole (-1.7%) and this trend becomes more and more pronounced with the passage of time: -5.9% in 1921, -9.1% in 1941, -8.4% in 1951 and -13.3% in 1961. Québec's position is unique in this regard, amongst provinces examined to date: since 1941, Québec is the only province where nuptiality is less favourable than for Canada as a whole. Legitimate fertility is the compensating factor; since 1891, this factor has exercised an exceptional positive effect and it is just about solely thanks to this one single factor that Québec has been able to maintain its high fertility for so long. This factor would account for the excess fertility of Québec, as compared to Canada, reaching the 34.1% level in 1921; it subsequently reduces but is still at 9.5% in 1961. Illegitimate

fertility only plays a very minor part and a negative one since 1941. Québec therefore held first place as far as the fertility of all women is concerned, between 1891 and 1951, due to its high legitimate fertility and despite its nuptiality which tended to drop increasingly. In 1961, the latter factor had finally won precedence over the former, so that Québec fertility is now lower than that for Canada as a whole.

3. ONTARIO – As in Québec, the part played by age distribution is relatively unimportant. Nuptiality is favourable in 1851 and 1871, becomes unfavourable in 1891 therefore before that of Québec, and remains as such until 1921. From 1941 onwards, its influence exercises a noticeable positive effect (7.4 to 9.8%). However, legitimate fertility is the most important of all factors in its effects. In all the years studied, it was lower than for Canada as a whole and this factor exercises an effect measured at more than 12% between 1891 and 1951; in 1961 this factor more than compensates for the favourable nuptiality. If British Columbia were excepted, the Ontario couples would be the least fertile of all Canadian couples since 1891, and this explains how it is that, taken as a whole, Ontario women have registered a particularly low fertility rate.

4. MANITOBA AND SASKATCHEWAN – At the outset, age distribution in these two provinces is favourable, but this advantage rapidly disappears. The high proportion of married women in Manitoba in 1891 and in Saskatchewan in 1911, has a very marked effect on fertility. This effect weakens, while remaining positive, over the ensuing years. The part played by fertility follows pretty much the same pattern, though becoming negative in 1921 and so continuing thereafter, except for Saskatchewan in 1961. Illegitimate fertility only begins to exercise an appreciable positive effect (around 2%) in 1961. Despite this similarity in behaviour, the fertility level in Saskatchewan maintains itself higher than in Manitoba.

5. BRITISH COLUMBIA – Age distribution in this province plays an important and positive role in fertility until 1911 and then becomes relatively unimportant, except in 1961, when the age structure in British Columbia is the least favourable of all provinces studied. Nuptiality was very high until 1911. This advantage was later reduced, but its consequences have been pretty well constant since 1921 and are appreciable (6.2 to 7.8%). Since 1941, British Columbia has enjoyed the second most favourable nuptiality, ranking after Ontario in this regard. On the other hand, it has come last in order of importance in regards to its legitimate fertility rate since 1911. The low legitimate fertility level reduced fertility by 34.8% in 1921, in comparison with what it would have been, had this province enjoyed the rates of legitimate fertility prevalent for Canada. This negative effect was of the order of 24.9% in 1941, 17.9% in 1951 and 11.0% in 1961. Despite

TRENDS AND FACTORS OF FERTILITY IN CANADA

the favourable effect of nuptiality, this low legitimate fertility has given this province the lowest rank in regards to the fertility of all women since 1921.

From the percentages in Table 3.3, a simple measure of the dispersion of the provinces with respect to each of the four immediate factors affecting the fertility of all women can be drawn. Each of these percentages indicates by how much the fertility of a province, at any given moment, is increased or decreased in relation to that of Canada, due to a difference between that province and Canada, with respect to a particular factor. Let us examine the percentages relative to one of these factors for a given year. Each percentage measures the spread between one province and Canada, from the viewpoint of the factor examined. The arithmetic mean of these percentages in absolute value (that is, in giving to all a positive value) is a good measurement of the dispersion of the provinces. By working out the calculations for the different years, the way the dispersion of the provinces evolves over the course of time can be studied. We have worked out these calculations with respect to the three main factors: age distribution, nuptiality and legitimate fertility.⁵ The results are found in Table 3.4.

From the viewpoint of age distribution amongst women aged between 15 and 49, dispersion increases between 1871 and 1911, according to the percentages in Table 3.4. This is due solely to the addition of new provinces. It may, therefore, be concluded that, since 1871, age distribution had tended to become uniform, except from 1951 to 1961. It is also due to the addition of Manitoba and British Columbia that the dispersion of nuptiality increases between 1871 and 1891. The addition of Saskatchewan, in 1911, results in maintaining the dispersion at a high level (12.3%), the dispersion in the five provinces represented in the 1891 figures having dropped to 8.7%. Until 1911, what happens is that provinces which have been recently settled and where nuptiality is exceptionally high, are added to the initial provinces. Later, nuptiality in these new provinces comes closer to the nuptiality in the older established provinces. This phenomenon does not come into play after 1921. The dispersion gap, however, does continue to narrow until 1951, and after that, widens slightly. To summarize, if the influence of new provinces coming into the picture before 1921 is eliminated, one may conclude that differences in nuptiality from province to province were quite stable until 1921, and then reduced by about a quarter. In the case of legitimate fertility, the divergence between

⁵The percentages in Table 3.3 have been adjusted so that their sum will equal the variation in fertility for all women. In calculating dispersion, we have used unadjusted percentages.

Table 3.4 – Dispersion of the provinces in respect of the three main factors influencing the fertility of all women aged 15-49, 1871 to 1961

NOTE: Arithmetic mean of absolute value of uncorrected percentages analogous to those in Table 3.3. There were only three provinces in 1871, five in 1891, and six for the other years.

Year	Factor			
	Age distribution	Nuptiality	Legitimate fertility	All factors ^a
1871	0.9	5.6	3.9	4.6
1891	3.7	15.5	13.1	28.5
1911	3.9	12.3	10.6	20.6
1921	1.6	8.5	17.8	17.6
1941	1.2	7.6	16.2	12.5
1951	0.7	5.6	10.3	6.0
1961	2.5	6.1	6.1	4.3

^a Inclusive of illegitimate fertility, from 1921 onwards. This is in fact the dispersion of the general fertility rate.

the provinces is a little less marked, at the outset, than is the divergence in nuptiality, but is a good deal more persistent. Once again, account must here be taken of the entry of the new provinces where legitimate fertility was very high, at that time, except for British Columbia. If these "accidents" were eliminated, the dispersion constantly increases until 1921. The growth is particularly sharp between 1911 and 1921: it was between these two years that fertility collapsed in British Columbia, whereas Québec maintained her level. This dispersion in legitimate fertility levels persisted until 1941. Twenty years later, it was reduced by about two-thirds, thus returning to the level of dispersion in nuptiality.

By comparing the first three columns in Table 3.4, we can get some idea of the relative importance of the different factors in the differences in fertility from province to province: the differences in nuptiality seem to have dominated the picture until 1911; after that date, legitimate fertility is the most important factor. It is not surprising to find that the percentages in the last column are frequently very different from the sum of the factors: to a large extent, the diverse factors compensate one another. The conclusion to be drawn from all these observations is that there is now a marked convergence in behaviour patterns from province to province – it is a pattern of fairly recent date in so far as legitimate fertility (1941) is concerned, but older for the two other factors.

Chapter 4

VARIATIONS IN FERTILITY BY TYPE OF RESIDENCE

Differences in fertility between urban and rural areas have frequently been studied and comprise one of the most important and persistent of the factors affecting fertility. In Canada, as in other countries, this factor played a major role but lately it has somewhat lost some importance. If we compare the women ever married and living on a farm, to the women living in cities of more than 100,000 inhabitants, we find that there is a 34% difference in relation to the fertility of farm women, amongst the older women (that is, amongst the women who were over 65 years of age in 1961). The difference reached maximum point in the case of women aged between 50 and 55 years, namely 45% and then tended to decrease amongst the younger women. It is still an important difference, however, since it is still around 30% for women between 25 and 30 years of age.¹

It would seem that this difference in fertility by residence has been present in Canada since the middle of the last century. The first part of this chapter examines some statistical data available on the subject and relating to the second half of the nineteenth century. Our data for the twentieth century are very much more complete: child-woman ratios and number of live-born children per woman. Data under both of these headings have been analysed in Sections 2 and 3 in the case of married women (or previously married) and for women of all marital status, respectively.

There are, however, numerous factors tied in with residence and we may indeed wonder, whether the influence of residence on fertility is not merely the end-product of differences in educational, income and skill levels . . . , etc. Section 4 will examine this question.

¹ See further along in this study, Table 4.3. In the case of women who were between the ages of 25 and 30 in 1961, the difference can be expected to increase as these women get older.

1. SOME INDICATIONS ABOUT THE SECOND HALF OF THE NINETEENTH CENTURY

It would seem that in the mid-nineteenth century, city couples were less fertile than other couples. This seems to be the obvious conclusion to be drawn from some statistical data available for this period. It should be pointed out, at the very outset, that these statistics are open to question, but there is no lack of coherence in results based on their analysis so they may merit some examination. Censuses from 1844 to 1891 give, for some towns, the population aged between 0 and 1 year and, in some cases, an estimate of the number of children born in the year just before the census was taken. We shall use the first information.

We know that, generally speaking, the population between 0 and 1 year of age is under-evaluated, and this is already an important factor, as we noted in Chapter 1. However, to the extent to which this underestimation is no higher for the towns than for the rest of the country, these rather questionable data may be put to some use. We shall compare the legitimate fertility in some major towns with the fertility of the province in which these towns are situated. The method utilized will be explained on the basis of the oldest data available, those for Montréal in 1844.

In fact, it is the county of Montréal which we shall be examining. At that time, 1844, there were about 9,200 married women between 15 and 50 years of age in the county. These married women can be divided up into three age groups: 15-20 years, 21-39 years and 40-49 years.¹ If we apply the legitimate fertility rate which we estimated for Québec in 1851 to the number of married women in these three age groups, we obtain the number of legitimate births that would have taken place had the married women in Montréal had had the same fertility as that of Québec in 1851. The same calculation can be worked out for married women in the province of Québec in 1844. On the other hand, the 1844 Census gives us the population aged between 0 and 1 year for Montréal county and for the province. The following table is a comparison, in both cases, of the population aged from 0 to 1 year and the expected number of births.

	County of Montréal	Province of Québec
1. Population aged 0-1 year	3,001	32,230
2. Expected number of births	3,494	33,428
3. $1 \div 2$	0.859	0.964

¹ An estimate must be made for the last age group, the information given in the census being related to the 40 to 59 age group.

Obviously, we cannot expect the two figures to be the same. Indeed, in relation to the number of births taking place over the course of a year, the population aged between 0 and 1 year is appreciably reduced (probably by more than 10%), due to infant mortality. Furthermore, in this case, there is no certainty that the fertility of 1851 be applicable to married women in the province of Québec in 1844. However, had these two factors exercised the same influence on the province as a whole and in the county of Montréal and had legitimate fertility been the same in both cases, the same ratio should be found in line 3 of the preceding table.³ We shall suppose that the underevaluation of the children aged 0 to 1 year and infant mortality had had the same influence on the whole of the province and in Montréal county. Under these circumstances, the difference between the two ratios in line 3 is due to the difference in fertility between Montréal county and the province of Québec. In dividing 0.859 by 0.964, we get a type of index representing the level of legitimate fertility for Montréal as compared to that for the province of Québec. In this case, the index is 89 (that for the province of Québec being equal to 100). Therefore, the fertility of Montréal couples would seem to be 11% lower than that of couples in Québec as a whole. The same method gives an index of 90 for the *county* of Québec.

Obviously, questions can be put about the value of such a method and the author certainly does not feel this to be a foolproof method. It rests on a number of hypotheses that have not been checked and cannot be checked. It is likely that part of the difference noted between town and province is due to higher infant mortality in town; however, this excess mortality probably would not contribute to reducing the number of children between 0 and 1 year by more than 5%. The element most difficult to evaluate is the part played by the underestimation of children between 0 and 1 year and there is nothing to indicate that underestimation may have been more important in town than in the country or, on the contrary, that the reverse is true. A rapid examination of the data points to the conclusion that there was serious underestimation of the children aged between 0 and 1 year; it seems to have ranged between 5% and 25% or thereabouts, depending on the province and census.

The results of these analyses are to be found in Table 4.1. They concern two Maritime towns, two Québec towns, four Ontario towns and Winnipeg; with the exception of four cases, the index figures are under 100 and, in fifteen cases, under 90. Despite the somewhat disorderly variations in the index, it would seem that from the mid-nineteenth century,

³ Other factors may also have a part to play, notably a difference in illegitimate fertility and a difference in age distribution within the age groups used. But these factors probably exercise an influence favourable to the towns.

legitimate fertility in the towns was lower than in the remainder of the country. In Toronto and Montréal, the two major cities, the index was lower than in other towns.

Table 4.1 – Index measuring the level of legitimate fertility of selected cities as a ratio of the provincial level, 1844 to 1891

(Provincial index = 100)

Town	1844	1851	1871	1891
Halifax.....	—	—	72	97
Saint-Jean	—	—	85	76
Montréal	89	60	81	79
Québec	90	114	78	100
Hamilton	—	92	89	92
Kingston	—	95	94	104
Ottawa	—	81	92	112
Toronto	—	84	82	86
Winnipeg	—	—	—	84

Obviously, these results may be interpreted in other ways. The only interpretation which could explain indices of under 90 is that in the towns, the underassessment of the population of children aged between 0 and 1 year was more marked than elsewhere in the country. This may be, but we shall find that in 1921, the fertility of urban couples was about 20% below that of rural couples. It would be surprising that such a difference – which remained pretty well stable subsequently – had only begun to develop after 1891.

2. FERTILITY OF MARRIED OR EVER-MARRIED WOMEN

The analysis in this section (as in the following section) is based on two types of data of different significance.

The child-woman ratio, that is to say the number of children aged 0-4 divided by the number of women aged 15-49, represents the fertility of the five-year period preceding the census recording these data. It is therefore a period index of fertility. On the other hand, the number of live births per woman represents the fertility of real cohorts and the births in each cohort could have been distributed over quite a long period.

RATIO OF CHILDREN AGED 0-4 TO MARRIED WOMEN AGED 15-49, 1921-1961

Since 1921, we know the age, sex and marital status distribution of the urban population. Therefore, we can deduct from available figures a reasonably good indication of the fertility of urban and rural couples, by dividing the number of children under the age of 5 by the number of married

TRENDS AND FACTORS OF FERTILITY IN CANADA

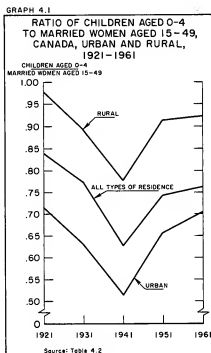
women aged between 15 and 50. The results of this calculation are in Table 4.2. In the last section of this table will be found the ratio of urban to rural fertility. Both in town and in the country, this forty-year period is marked by two clearly defined patterns. Between 1921 and 1941, fertility drops by 28% amongst Canada's urban couples, and 20% amongst rural couples. Between 1941 and 1961, there is a 37% increase amongst urban couples and an 18% increase amongst rural couples. The relative difference became greater therefore, until 1941, and then decreased. This is what can

Table 4.2 – Ratio of children aged 0-4 to married women aged 15-49, Canada and provinces, urban and rural, 1921 to 1961

Area	1921	1931	1941	1951	1961
Rural					
Canada .....	.716	.630	.515	.656	.704
Prince Edward Island .....	.798	.797	.677	.830	.869
Nova Scotia .....	.836	.753	.641	.780	.778
New Brunswick .....	.756	.693	.580	.796	.802
Québec .....	.882	.831	.655	.758	.773
Ontario .....	.619	.538	.438	.586	.652
Manitoba .....	.662	.481	.384	.603	.655
Saskatchewan .....	.776	.602	.485	.660	.752
Alberta .....	.693	.538	.463	.667	.762
British Columbia .....	.521	.432	.391	.569	.628
Urban					
Canada .....	.978	.894	.779	.914	.923
Prince Edward Island .....	.974	.919	.855	1.034	.988
Nova Scotia .....	.945	.881	.802	.905	.874
New Brunswick	1.064	1.034	.929	1.118	1.037
Québec	1.282	1.289	1.135	1.224	1.136
Ontario .....	.791	.714	.606	.786	.833
Manitoba .....	.993	.838	.724	.825	.878
Saskatchewan	1.076	.910	.764	.789	.826
Alberta .....	.953	.839	.724	.790	.870
British Columbia .....	.663	.608	.566	.734	.831
Urban/rural					
Canada .....	.73	.70	.66	.72	.76
Prince Edward Island .....	.82	.87	.79	.80	.88
Nova Scotia .....	.88	.86	.80	.86	.89
New Brunswick .....	.71	.67	.62	.71	.77
Québec .....	.69	.64	.58	.62	.68
Ontario .....	.78	.75	.72	.75	.78
Manitoba .....	.67	.57	.53	.73	.75
Saskatchewan .....	.72	.66	.64	.84	.91
Alberta .....	.73	.64	.64	.84	.88
British Columbia .....	.79	.71	.69	.78	.76

SOURCE: Censuses of Canada.

be measured directly in the third part of Table 4.2. The ratio of urban to rural fertility changes from .73 in 1921 to .66 in 1941, and then to .76 in 1961. However, as a whole, the gap is quite persistent, as will be seen in Graph 4.1.

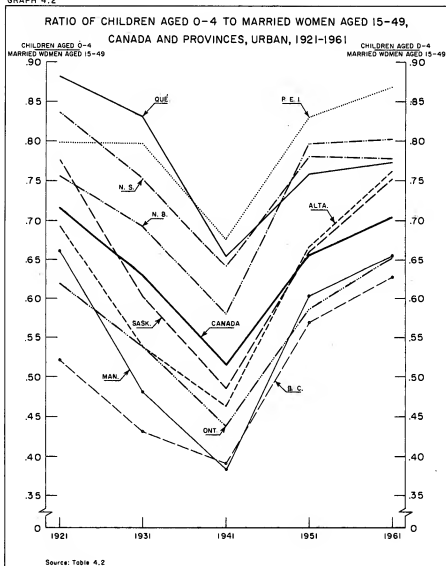


Analogue patterns have been observed in studying data relative to the provinces, with some exceptions. If we refer to Graph 4.2, we find that variations in the fertility of urban couples are very similar to variations in the fertility of couples throughout Canada, and indeed in the fertility of couples on a provincial basis. Certain provinces had a higher fertility in 1961 than in 1921, the highest increase being observed in British Columbia. This province nonetheless continues to be at the bottom of the list. The difference between the provinces has been reduced, but nonetheless remains quite important: in relation to the province where fertility is highest, the fertility in British Columbia is 41% lower in 1921 and 28% lower in 1961.

This narrowing of the gap is even more pronounced in the case of couples in rural areas (Graph 4.3). The couples in British Columbia were those whose fertility was lowest throughout the whole period, whereas the Québec couples are characterized by high fertility. In relation to the latter,

TRENDS AND FACTORS OF FERTILITY IN CANADA

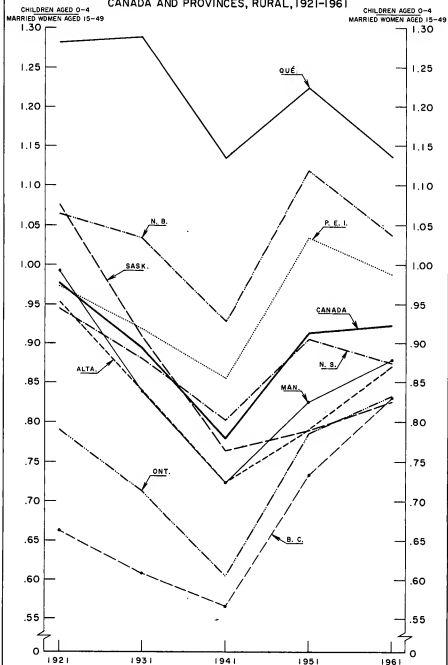
GRAPH 4.2



British Columbia couples registered a 48% lower fertility in 1921 and 27% lower in 1961. The relative difference between the two extreme provinces was about the same for rural and urban couples in 1961, but higher in the case of rural couples in 1921.

GRAPH 4.3

RATIO OF CHILDREN AGED 0-4 TO MARRIED WOMEN AGED 15-49, CANADA AND PROVINCES, RURAL, 1921-1961



Source: Table 4.2

Table 4.3 - Number of live-born children per 1,000 women ever married, according to their age in 1961, Canada, for various types of residence

Residence	Age of women in 1961											Women aged 65 and over in 1941
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	
All types of residence	735	1,327	2,178	2,775	3,102	3,231	3,110	3,154	3,385	3,650	4,038	4,818
Urban areas												
Less than 10,000 inhabitants	784	1,452	2,344	3,042	3,426	3,506	3,390	3,442	3,623	4,018	4,241	4,525
10,000 to 29,999 "	739	1,358	2,250	2,812	3,082	3,188	3,151	3,147	3,386	3,702	4,050	
30,000 to 99,999 "	677	1,272	2,154	2,713	3,006	3,065	2,981	3,009	3,251	3,592	4,012	4,379
100,000 inhabitants and over	640	1,117	1,846	2,346	2,579	2,613	2,436	2,473	2,700	2,959	3,436	
Rural non-farm	879	1,678	2,726	3,467	3,897	4,125	3,952	3,919	4,154	4,435	4,769	5,285
Rural farm	713	1,550	2,707	3,544	4,111	4,384	4,457	4,630	4,775	4,910	5,202	

SOURCES: DBS, *Census of Canada, 1961*, Bulletin 4.1-8, Table H1; DBS, *Census of Canada, 1941*, Vol. III, Table 51, pp. 682 and following.

In certain provinces, there is little difference between the fertility of urban couples and that of rural couples (see the last section in Table 4.2). This is the case for Prince Edward Island, Nova Scotia, Saskatchewan and Alberta. In all these cases, the differences between rural and urban fertility have decreased since 1941. The difference is still quite considerable in Québec where, in 1961, urban couples were 32% less fertile than the rural.

NUMBER OF LIVE-BORN CHILDREN

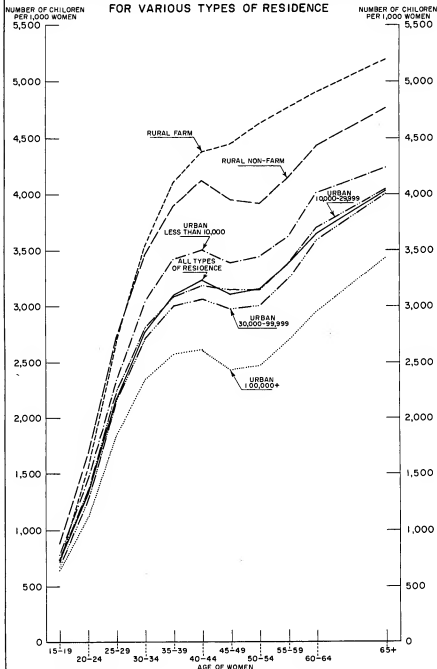
Information from the 1961 Census about the number of children born to married women, during their lifetime, enables us to pinpoint the behaviour of women, by age group, much more exactly. These data also enable us to measure fertility variations by the size of urban areas. This is the information in Table 4.3, illustrated in Graph 4.4. There is a constant reduction in fertility as we pass from women living on a farm to rural non-farm women, and then to those living in cities of increasing importance. However, up to the age of 30, the rural non-farm women bear a few more children than do rural farm women and it is only after the age of 45 that the fertility of the latter becomes markedly higher than that of the former, the difference reaching a maximum figure amongst women aged 50-54. With the exception of rural farm women, the fertility of women aged 45-54 is inferior to that of women aged 40-44. This drop in fertility is particularly noticeable amongst rural non-farm women and women in the larger towns. Recovery of fertility is therefore found in almost all types of residence.

Indeed, it is amongst women aged 50-54 that the relative difference in fertility is most marked, between various types of residence. In relation to the highest fertility (that of rural farm in general), the fertility of women living in cities of over 100,000 inhabitants is 66% amongst women aged over 65. This percentage decreases to 61% for women aged 60-64, and to 54% for those aged 50-54; it then increases progressively: 63% for women aged 35-39, and to 68% for women aged 25-29. The relative difference is therefore less amongst the younger women than amongst women aged 65 and over despite the fact that amongst the former, the age at the time of marriage (lower amongst rural women) plays a relatively important role.

We have added to Table 4.3 some data provided by the 1941 Census involving women ever married who were over 65 at the time. Had they survived, they would have had an average age of about 94 years in 1961. For all types of residence, these women (born before 1876) had more children than did the women who followed them. This is particularly noticeable amongst women who, in 1941, were living in cities of over 30,000 inhabitants. We may conclude that the fertility difference between rural and urban areas was much lower amongst those women than it has since become.

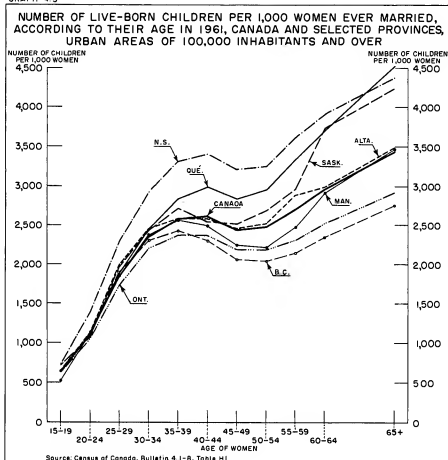
GRAPH 4.4

**NUMBER OF LIVE-BORN CHILDREN PER 1,000 WOMEN EVER MARRIED,
ACCORDING TO THEIR AGE IN 1961, CANADA,
FOR VARIOUS TYPES OF RESIDENCE**



FERTILITY OF MARRIED WOMEN

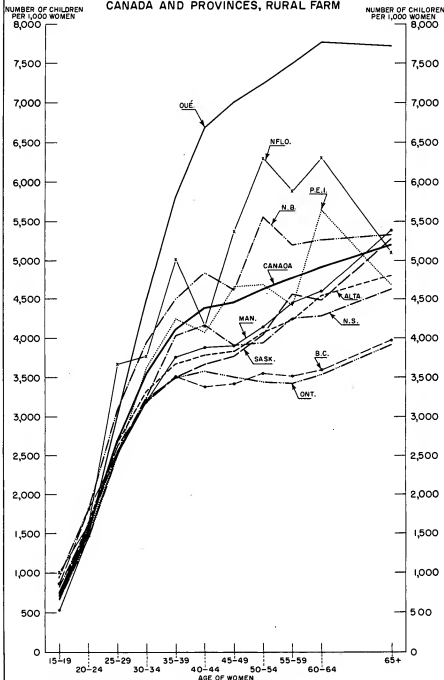
GRAPH 4.5



Graphs 4.5 and 4.6 represent analogous data for each province, but for only two types of residence: cities of more than 100,000 inhabitants and rural farm. The drop in fertility at the age of about 50 becomes clear in all major cities of all the provinces, while it plays virtually no part at all for rural farm women in all the provinces. There is also a larger gap between fertility levels from province to province amongst farm women than amongst urban women. Beyond the age of 45, the women living on a Québec farm are twice as fertile as are Ontario and British Columbia women in the same type of residence. The former are quite exceptional: the oldest amongst their number – those who were over 65 years of age in 1961 – bore very nearly eight children, and this figure is pretty close to biological fertility. As will be noted later, over 35% of these women had 10

GRAPH 4.6

NUMBER OF LIVE-BORN CHILDREN PER 1,000 WOMEN EVER MARRIED,
ACCORDING TO THEIR AGE IN 1961,
CANADA AND PROVINCES, RURAL FARM



Source: Census of Canada, Bulletin 4.1-B, Table H1.

children or over. However, amongst women living in the large cities, the Québec women were not those with highest fertility: the women in Nova Scotia, that is in Halifax, are those with highest fertility of all urban women. Here again, Ontario and British Columbia rank last. Women aged 45 to 60 living in cities of more than 100,000 inhabitants in these two provinces did not bear enough children to ensure their replacement by the next generation.

METROPOLITAN AREAS

In Table 4.4 will be found the number of live births to women ever married in each metropolitan area, by age of woman in 1961. Two of these areas, namely Québec and St. John's are characterized by high fertility, at least amongst women over 40 years of age. The older ones (65 years and over) had an average of six children (Québec) and five children (St. John's). At the opposite extreme are Toronto, Vancouver and Victoria, where the rates do not much exceed two children per woman, except in the case of women aged 30 to 45 in Vancouver and Victoria and amongst the oldest women in the three cities. The fertility of women between 20 and 35 years in St. John's is 50% higher than that of women of the same age in Toronto; that of women over 45 years is 100% higher in St. John's than in Toronto and, still compared to Toronto women, the fertility of women in Québec City, aged over 55, was even higher in 1961. Doubtless, Toronto is a much more urbanized environment than is Québec City, but this is not the sole factor accounting for the difference. London, even smaller than Québec City, has fertility rates that are hardly higher than Toronto's fertility rates. The fertility of women ever married, aged over 40 in Montréal is about 25% higher than that of Toronto women. Obviously then, there are other important factors affecting fertility.

There seems to be no marked differences between the fringe area and the central city in a given metropolitan area, as may be seen in Graph 4.7. We reproduce the number of live births per 1,000 women ever married in Toronto and Montréal, making the distinction between women living in fringe areas and women living in the central city. Generally speaking, fertility is higher in fringe areas than in the central cities, but the opposite is true of Toronto for women aged between 45 and 55, and of Montréal, for women aged over 65.

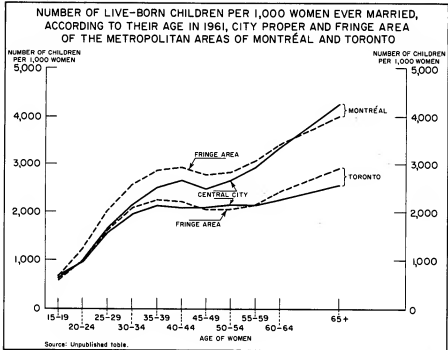
The excess in fertility in the fringe area of Montréal, diminishes constantly with increasing age: it runs 30% higher than in central city for the 20-24 age group; 2% for the 60-64 age group and then drops to -6% for women aged over 65, as we have already pointed out. In Toronto, the difference is negligible up to the age of 25; it then oscillates between 5% and 8% for the

Table 4.4 - Number of live-born children per 1,000 women ever married, according to their age in 1961, Canada, metropolitan areas

Metropolitan area	Age of women in 1961										
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 +
Calgary.....	656	1,231	1,988	2,407	2,469	2,395	2,313	2,366	2,508	2,712	3,195
Edmonton.....	656	1,231	2,005	2,505	2,705	2,758	2,597	2,650	3,231	3,246	3,774
Halifax.....	691	1,269	2,152	2,725	3,009	2,890	2,731	2,712	3,080	3,283	3,621
Hamilton.....	649	1,149	1,957	2,371	2,477	2,590	2,366	2,255	2,422	2,727	2,969
Kitchener-Waterloo.....	589	1,203	1,944	2,411	2,576	2,535	2,410	2,375	2,509	2,815	3,195
London.....	678	1,113	1,914	2,353	2,525	2,479	2,220	2,194	2,271	2,384	2,772
Montréal.....	626	1,094	1,827	2,348	2,687	2,777	2,609	2,709	2,980	3,368	4,167
Ottawa.....	848	1,179	2,032	2,643	2,841	2,899	2,649	2,686	3,154	3,216	3,946
Québec.....	600	1,020	1,829	2,534	3,279	3,782	3,704	3,919	4,551	5,009	6,178
Regina.....	720	1,073	1,960	2,431	2,715	2,538	2,509	2,691	2,956	3,737	4,230
Saskatoon.....	667	1,270	2,012	2,658	2,816	2,704	2,512	2,722	2,745	3,532	3,973
Saint-Jean (N.B.).....	813	1,349	2,363	3,008	3,181	3,168	2,762	2,846	3,187	3,104	3,483
St. John's (Nfld.).....	694	1,446	2,354	3,352	3,631	3,845	4,082	4,037	3,970	4,012	5,001
Sudbury.....	773	1,378	2,326	2,941	3,096	3,064	3,160	3,125	3,262	3,873	5,138
Toronto.....	612	999	1,619	2,071	2,223	2,200	2,068	2,089	2,136	2,337	2,750
Vancouver.....	688	1,210	1,882	2,313	2,430	2,324	2,101	2,081	2,224	2,457	2,860
Victoria.....	613	1,278	2,172	2,436	2,608	2,384	2,058	1,937	1,958	2,014	2,380
Windsor.....	620	1,299	2,169	2,734	2,916	2,891	2,638	2,610	2,697	3,006	3,388
Winnipeg.....	527	1,136	1,865	2,383	2,580	2,506	2,253	2,214	2,462	2,916	3,462

SOURCE: Unpublished information from the 1961 Census.

GRAPH 4.7

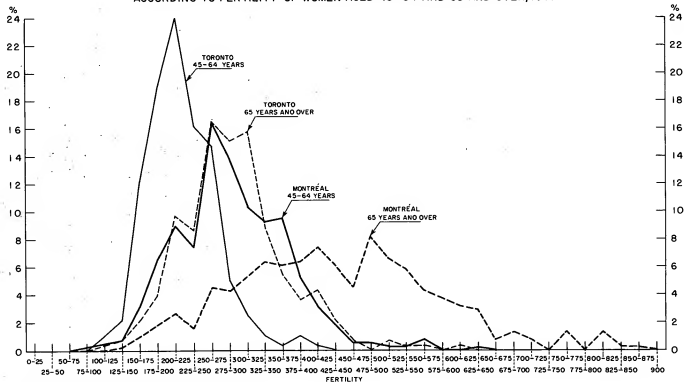


25-45 age group, drops to -3% for the 45-55 age group, and then becomes positive and increases: 8% for the 60-64 age group and 19% for the 65 and over.

However, fertility is far from being uniform within each metropolitan area. In Graph 4.8, we have shown the distribution for the census tracts of Montréal and Toronto, by number of live-born children to women ever married aged 45 to 65, and 65 and over. The distribution for the oldest women in Montréal is widespread, the modal class accounting for only 8.2% of the tracts (31 out of 377 tracts). The fertility of all tracts, for women of that age, stands at 4.17 children per woman, and this is higher than the fertility of rural farm women of the same age in both Ontario and British Columbia. Montréal women, aged between 45 and 65, and Toronto women, aged over 65, record about the same fertility, namely 2.85 and 2.75 children, respectively. In the case of both these groups of women, distribution for the tracts is about the same, with a rather marked concentration between 2.50 and 3.25 children. This concentration is accentuated in the case of Toronto women, aged between 45 and 65, whose fertility runs at a low ebb: 2.14 children. The relationship between the general level of fertility and the degree of

GRAPH 4.8

PERCENTAGE DISTRIBUTION OF THE CENSUS TRACTS OF MONTRÉAL AND TORONTO,
ACCORDING TO FERTILITY* OF WOMEN AGED 45-64 AND 65 AND OVER, 1961



*NUMBER OF LIVE-BORN CHILDREN PER 100 WOMEN EVER MARRIED.

Source: Census of Canada, 1961, Bulletin CX-1.

Table 4.5 - Distribution of women ever married by number of live-born children, for selected age groups, Canada by type of residence, Québec rural farm and Toronto, 1961

Age and type of residence	Number of live-born children										
	0	1	2	3	4	5	6	7	8	9	10 +
20-24 years											
Canada, urban	29.2	35.9	23.4	8.5	2.3	0.5	0.2	-	-	-	-
" , rural non-farm	17.6	30.5	29.4	14.7	5.5	1.7	0.5	0.1	-	-	-
" , rural farm	19.7	33.1	28.2	12.9	4.6	1.0	0.4	0.1	-	-	-
Québec, rural farm	20.9	37.7	23.0	10.7	5.7	1.1	0.8	-	0.1	-	-
Toronto	36.3	37.0	19.2	5.9	1.2	0.3	0.1	-	-	-	-
35-39 years											
Canada, rural	10.2	13.9	25.8	21.4	13.1	7.0	3.7	2.1	1.2	0.7	0.9
" , rural non-farm	6.8	8.8	18.3	18.7	14.7	10.2	7.1	5.0	3.5	2.5	4.4
" , rural farm	5.2	6.7	16.7	19.2	16.7	11.4	7.8	5.3	3.8	2.5	4.7
Québec, rural farm	4.8	4.1	6.9	9.8	12.6	11.3	11.0	10.0	8.5	6.7	14.3
Toronto	13.1	18.1	31.2	21.0	9.9	3.7	1.8	0.7	0.2	0.2	0.1
45-49 years											
Canada, rural	14.6	17.0	24.7	17.1	10.4	5.8	3.7	2.3	1.4	1.0	2.0
" , rural non-farm	10.9	11.4	17.3	15.8	11.3	8.3	6.3	4.9	3.5	3.0	7.3
" , rural farm	7.2	8.3	15.8	16.7	13.1	10.3	7.2	5.0	4.0	3.0	9.4
Québec, rural farm	5.8	4.1	5.6	7.8	7.7	8.8	9.4	8.1	8.3	6.9	27.5
Toronto	17.3	21.5	29.1	16.6	7.9	3.9	1.8	0.9	0.4	0.3	0.3
65 years and over											
Canada, rural	13.6	13.4	17.0	14.5	10.9	7.8	5.8	4.2	3.4	2.6	6.8
" , rural non-farm	12.4	9.3	11.6	11.9	10.3	8.9	7.1	5.9	5.1	4.3	13.2
" , rural farm	7.1	8.0	11.5	12.5	11.9	9.4	8.0	6.4	5.4	5.1	14.7
Québec, rural farm	6.5	3.9	4.8	6.6	6.8	5.3	6.1	7.2	7.3	8.2	37.3
Toronto	14.6	17.6	21.3	17.2	11.4	6.7	4.1	2.6	1.8	1.2	1.5

SOURCE: DBS, *Census of Canada, 1961*, Bulletin 4.1-7, Table G1.

dispersion from tract to tract can be more systematically studied, on the basis of the figures given below, expressed in terms of children per woman.

	<u>Montréal</u>		<u>Toronto</u>	
	65 yrs & over	45-64 years	65 yrs & over	45-64 years
First quartile	3.39 children	2.41 children	2.48 children	1.88 children
Median	4.34 "	2.85 "	2.88 "	2.16 "
Third quartile	5.33 "	3.43 "	3.30 "	2.51 "
Third less 1 st quartile	1.94 "	1.02 "	0.82 "	0.63 "
Average for metropolitan area	4.17 "	2.85 "	2.75 "	2.14 "

Rather paradoxically, amid all this information from the 1961 Census, it is within the same metropolitan area, the Montréal area, that are to be found the women aged over 45 whose fertility is lowest, and those whose fertility is highest. The 624 women aged 45-64 in Montréal tract 58 had an average of 0.96 children, whereas women, aged over 65, in Montréal tract 404, had had 10.75 children. It should be added that this is a very small group, comprising 37 women, living in a relatively little populated tract of Duvernay. Some of these women may be living on farms. But there is another census tract where women, aged over 65, had an even higher fertility rate: 66 women in l'Ancienne-Lorette, in the Québec metropolitan area, had an average of 12.08 children.

DISTRIBUTION BY NUMBER OF CHILDREN

If the average fertility differences between types of residence are quite noticeable, they become even more striking when the distribution of women by number of children born, is studied. Thus, the percentage of women ever married aged between 45 and 49 years in 1961, and who had borne ten or more children, was 2% in the case of urban women, and 9.4% in the case of rural farm women. Obviously, so wide a gap is only found for the category of ten or more children. Nonetheless, in all categories corresponding to five or more children, the percentages are at least twice as high in cases involving rural farm women, as in cases involving urban women. In Table 4.5 we find the distribution of women ever married by the number of children they have borne. This information is given for some age groups, and the three usual types of residence, to which we have added two particular cases: the Toronto women, and women living on farms in the province of Québec. The two latter groups are very representative of two extreme situations, in regard to variations in fertility by type of residence.

The comparison of three age groups over 35 years, permits us to discover an evolution common to all types of residence: in proceeding from the older to the younger generation, the proportion of childless women decreases, and the proportion of women who have borne from two to four children increases⁴ whereas the proportion of women who have had at least nine children decreases. On the other hand, the pattern of evolution differs in those cases where the number of children runs from five to eight; in the case of rural women (farm or non-farm), the decrease in percentage only becomes noticeable after they have borne seven children; in the case of urban women, the decrease is noticeable after the fifth child, but amongst Québec farm women the percentage increases up to the eighth child. It would therefore seem that, as fertility drops, the categories in which fertility is high lose importance progressively from the most fertile to those with three or four children.

We might now compare, for a given age group, the different types of residence. This comparison is illustrated by Graph 4.9, for women aged 35-39 and those aged 65 and over. As might be expected, the percentages corresponding to a small number of children (between 0 and 3) are lower amongst rural than amongst urban women. The difference is particularly marked in the case of women who either had no children at all, or only bore one. In this regard, the very low percentage of rural farm women between 35 and 39 years of age who bore no children should be noted: 5.2% for Canada as a whole and 4.8% for Québec. Beyond 35 years of age, urban women markedly favour two to three children (the mode is two children); the greatest number of rural women equally conform to this pattern, although the mode is usually three children. The pattern amongst Québec rural farm women is quite striking by reason of the broad diversity: in the three age groups over 35 years, the category where the number of children ranges from three to nine represents a percentage ranging between 5.3 and 12.6%. It is where there are a large number of children that the relative differences become more appreciable from one type of residence to another. The following is the percentage of women who have had at least six children:

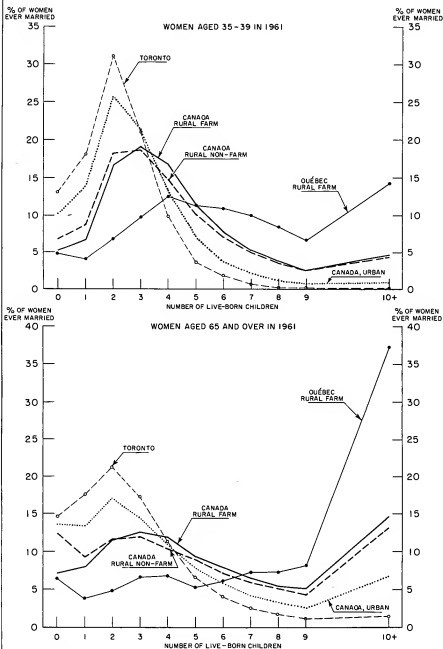
Age of women in 1961

	35-39 years	45-49 years	65 yrs & over
Canada, urban	8.6%	10.4%	39.6%
Canada, rural non-farm . . .	22.5%	25.0%	35.6%
Canada, rural farm	24.1%	28.6%	39.6%
Québec, rural farm	50.5%	60.2%	66.1%
Toronto	3.0%	3.7%	11.2%

⁴ Except for Toronto women who have had four children: the percentage is lower for women between 45 and 49 years of age than for those over 65.

GRAPH 4.9

DISTRIBUTION OF WOMEN EVER MARRIED BY NUMBER OF
LIVE-BORN CHILDREN, FOR SELECTED AGE GROUPS, CANADA BY TYPE
OF RESIDENCE, QUÉBEC RURAL FARM AND TORONTO, 1961



Source: Table 4.5

Clearly, in a rural environment, even amongst relatively young women, families comprising six children are far from being something of the past: about a quarter of the married women between 35 and 39 years of age have had at least six children: indeed half the Québec rural farm women fall into this category. These percentages will no doubt be higher when the women turn fifty, but even taking this factor into account, the proportion of very fertile women seems to be dropping. The percentages are much lower in the case of urban women: only 8.6% of the women between 35 and 39 years of age have borne six or more children. In Toronto a family of this size is now the exception, because only 3% of the women bear this many children.

PARITY-PROGRESSION RATIO

The parity-progression ratio is the fraction of women who have borne a certain number of children and who will bear at least one more. Table 4.6 gives the figure for the same age groups and the same types of residence as chosen for the preceding table. Generally speaking, the parity-progression ratios of a low order (0 to 1, or 1 to 2) tend to be higher amongst women ranging in age from 35 to 39 than amongst women aged over 65, but the picture is reversed when we examine the parity-progression ratios of a higher order. With the exception of rural farm Québec, the ratios decrease quite sharply when we pass from the second (1 to 2 children) to the third (2 to 3 children). It is also in the latter that the difference from one type of residence to another becomes really significant, except amongst the older women. It would therefore seem that, after their second child, there is a very marked difference in the behaviour of women. We should point out how exceptional is the behaviour of Québec women, living on farms: those who are over 45 years of age maintain up to the sixth birth, parity-progression ratios higher than 0.87. Our calculations indicate that for the tenth birth, the parity-progression ratio (from 9 to 10) is 0.80 for women aged 45-49 and 0.82 for those aged 65 and over.

3. FERTILITY OF WOMEN OF ALL MARITAL STATUS

The fertility of married women is only one component of fertility. Instead of solely considering the behaviour of married women (or of women ever married), we might consider the fertility of women of all marital status, including those who have remained single. Generally speaking, in regard to the comparison between urban and rural, consideration of the never-married women accentuates the difference in fertility because not only are married urban women less fertile than rural married women, but there is a higher proportion of women who are not married (or who have never married) in urban areas. The latter statement can be verified further on (Table 4.10). We shall first give some idea of the evolution in the last fifty years, in the

TRENDS AND FACTORS OF FERTILITY IN CANADA

Table 4.6 – Parity-progression ratios of women ever married, for selected age groups, Canada by type of residence, Québec rural farm, and Toronto, 1961

Age and type of residence	Birth order					
	From 0 to 1	From 1 to 2	From 2 to 3	From 3 to 4	From 4 to 5	From 5 to 6
20-24 years						
Canada, urban .....	.708	.492	.329	.260	.242	.333
“ , rural non-farm .....	.824	.630	.434	.347	.302	.263
“ , rural farm .....	.801	.587	.401	.318	.230	.428
Québec, rural farm .....	.791	.524	.445	.418	.262	.436
Toronto .....	.636	.419	.280	.212	.259	.293
35-39 years						
Canada, urban .....	.898	.845	.659	.571	.543	.546
“ , rural non-farm .....	.932	.906	.784	.717	.690	.687
“ , rural farm .....	.948	.930	.810	.731	.680	.678
Québec, rural farm .....	.952	.957	.924	.884	.830	.817
Toronto .....	.869	.791	.546	.441	.404	.450
45-49 years						
Canada, urban .....	.854	.800	.639	.610	.610	.642
“ , rural non-farm .....	.819	.872	.777	.737	.747	.751
“ , rural farm .....	.928	.910	.813	.757	.748	.734
Québec, rural farm .....	.942	.957	.937	.907	.900	.872
Toronto .....	.827	.740	.525	.481	.489	.487
65 years and over						
Canada, urban .....	.864	.845	.767	.742	.736	.744
“ , rural non-farm .....	.876	.894	.851	.822	.813	.801
“ , rural farm .....	.929	.914	.865	.830	.805	.807
Québec, rural farm .....	.935	.958	.947	.922	.914	.926
Toronto .....	.854	.794	.685	.630	.610	.626

SOURCE: Table 4.5.

fertility of women of all marital status, by type of residence, using the child-woman ratio.

RATIO OF CHILDREN AGED 0-4 TO WOMEN AGED 15-49, 1911-1961

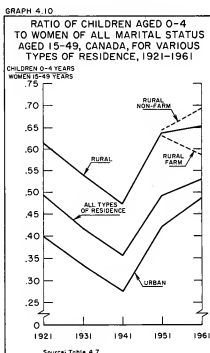
This ratio will be found in Table 4.7, for Canada and the provinces (except Newfoundland), for urban and rural areas, between 1911 and 1961. It was possible to distinguish the rural farm areas from the rural non-farm areas, for 1951 and 1961. These ratios are related to period fertility rates, that is to say, they are sensitive to the influence of temporary factors that may affect fertility of a given period. This is no doubt the explanation for

Table 4.7 - Ratio of children aged 0-4 to women aged 15-49, Canada and provinces,
rural and urban, 1911 to 1961, and non farm and farm, 1951 and 1961

Year and type of residence	Canada	P.E.I.	N.S.	N.B.	Qué.	Ont.	Man.	Sask.	Alta.	B.C.
1911										
Urban .....	.420	.353	.484	.387	.490	.352	.463	.530	.490	.379
Rural .....	.617	.470	.524	.625	.767	.470	.689	.768	.706	.540
1921										
Urban .....	.399	.355	.441	.389	.455	.347	.392	.498	.449	.322
Rural .....	.615	.521	.535	.632	.720	.490	.659	.775	.692	.472
1931										
Urban .....	.335	.361	.393	.346	.406	.299	.252	.344	.314	.247
Rural .....	.541	.523	.511	.603	.677	.449	.507	.578	.561	.406
1941										
Urban .....	.277	.321	.338	.290	.320	.253	.206	.265	.277	.228
Rural .....	.474	.497	.481	.552	.595	.397	.439	.464	.472	.378
1951										
Urban .....	.422	.451	.490	.484	.441	.401	.391	.409	.450	.397
Rural .....	.637	.696	.632	.763	.743	.590	.588	.561	.579	.562
Non-farm .....	.644	.752	.671	.788	.714	.622	.598	.500	.564	.589
Farm .....	.631	.660	.558	.732	.769	.556	.583	.591	.586	.496
1961										
Urban .....	.488	.535	.511	.520	.487	.479	.458	.518	.560	.457
Rural .....	.653	.683	.625	.708	.690	.629	.640	.609	.654	.645
Non-farm .....	.693	.727	.650	.741	.714	.682	.718	.632	.713	.676
Farm .....	.588	.635	.487	.561	.655	.528	.568	.593	.611	.495
Ratio urban/rural										
1911 .....	.68	.75	.92	.62	.64	.75	.67	.69	.69	.70
1921 .....	.65	.68	.84	.62	.63	.71	.60	.64	.65	.68
1931 .....	.62	.69	.77	.57	.60	.67	.50	.60	.56	.61
1941 .....	.58	.65	.70	.53	.54	.64	.47	.57	.59	.60
1951 .....	.66	.65	.78	.64	.59	.68	.67	.73	.78	.71
1961 .....	.75	.78	.82	.73	.71	.76	.72	.85	.86	.71

SOURCE: Censuses of Canada.

the fact that in 1951 and 1961, rural non-farm women had a higher fertility than rural women living on farms. As will be seen from Graph 4.10, the difference between the two increases and the rural farm women are the only group whose fertility decreases between 1951 and 1961. This development prevails in most provinces. As for the remainder of the picture, fertility as related to type of residence, and to differences between one type of residence and another, is much the same as already observed in the case of the married women,⁵ and no further comments will be made here. It might be noted that the recovery in fertility, after 1941, was higher for women as a whole than amongst just the married women, due to increased nuptiality which adds itself to increased legitimate fertility. It will also be noted that the ratio of urban fertility to rural fertility is lower for women as a whole (last lines, Table 4.7) than for married women (last columns, Table 4.2).

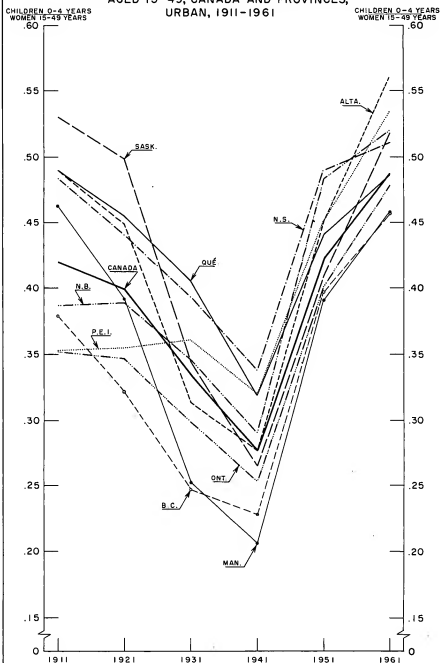


In Graphs 4.11 and 4.12 are illustrated the evolution in the child-woman ratios for each province. The patterns are quite similar to those noted for the fertility of married women. However, the relative place of certain provinces is no longer the same. Under the heading of urban areas, several provinces share first place, depending on the years: Saskatchewan

⁵ See Table 4.2 and Graph 4.1.

GRAPH 4.11

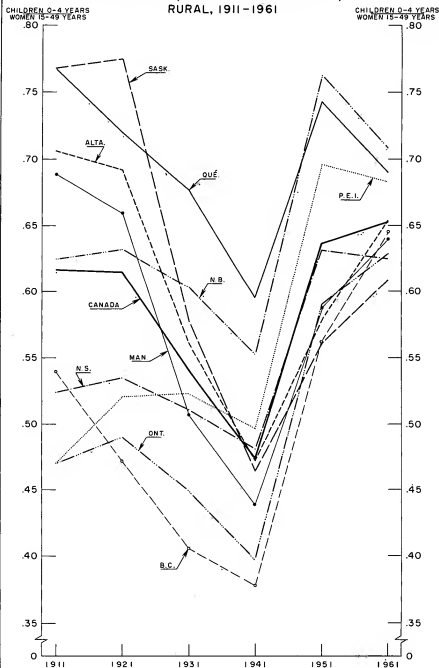
RATIO OF CHILDREN AGED 0-4 TO WOMEN OF ALL MARITAL STATUS
AGED 15-49, CANADA AND PROVINCES,
URBAN, 1911-1961



Source: Table 4.7

GRAPH 4.12

**RATIO OF CHILDREN AGED 0-4 TO WOMEN OF ALL MARITAL STATUS,
AGED 15-49, CANADA AND PROVINCES,
RURAL, 1911-1961**



Source: Table 4.7

in 1911 and 1921, Québec in 1931, Nova Scotia in 1941 and 1951, finally, Alberta in 1961. In so far as rural areas are concerned, Saskatchewan ranks first for 1911 and 1921 and then falls in last place for 1961. For other years, Québec and New Brunswick share first place, but these two latter provinces stand less pre-eminently amongst the provinces than was the case for fertility of married women: their high legitimate fertility is compensated by their low nuptiality.

NUMBER OF LIVE-BORN CHILDREN PER WOMAN

In the 1961 Census, only women who had been previously married were asked how many children they had borne. From the information collected in answer to this question, it is possible to estimate the number of live-born children per woman, whatever her marital status. The number of children per ever-married woman can be multiplied by the proportion of ever-married women to women of all marital status. This calculation can be worked out by age groups and for diverse segments of the female population. However, the answer is an underevaluation of fertility, because one fraction of the illegitimate births are not accounted for, namely, those whose mother did not subsequently get married. Because we have no way of estimating these births, we have had to disregard them, but the error thus made must not be very sizable.

This estimate of the number of live-born children per woman was made by age groups, for the three usual types of residence, for Canada and each of the provinces. The results are shown in Table 4.8. They are illustrated, for Canada as a whole, in Graph 4.13. Because of their late marriages, rural farm women experience the lowest fertility under 20 years of age, an observation which holds true for all provinces. Except in Newfoundland and in Québec, they have exceeded the fertility of urban women at 20-24 years of age. It is only in the 30-34 age group that, for Canada as a whole, the fertility of rural farm women exceeds that of rural non-farm women, although there is considerable age variation in this regard, from province to province. Graphs 4.14 and 4.15 enable us to compare the position of each province, for rural farm and urban women. Amongst the former, the provinces of Québec and Newfoundland are characterized by their very high fertility, which is nevertheless in the course of decreasing rapidly; at the opposite end of the scale are the provinces of Ontario, British Columbia and Nova Scotia.

In the case of urban women, only the province of Newfoundland stands out markedly from the other provinces. Manitoba ranks along with Ontario and British Columbia amongst low fertility provinces.

Table 4.8 - Number of live-born children per 1,000 women of all marital status, according to their age in 1961, Canada and provinces, for various types of residence

Region and type of residence		Age of women in 1961										
		15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 +
Canada	All types of residence	64	790	1,843	2,484	2,817	2,943	2,815	2,826	3,033	3,278	3,626
	Urban	59	699	1,657	2,235	2,507	2,562	2,412	2,410	2,609	2,882	3,276
	Rural non-farm	104	1,175	2,432	3,200	3,613	3,857	3,671	3,617	3,847	4,125	4,435
	Rural farm	34	839	2,363	3,324	3,918	4,213	4,288	4,426	4,551	4,645	4,869
Newfoundland	All types of residence	104	1,096	2,557	3,556	4,161	4,618	4,625	4,339	4,494	4,753	5,213
	Urban	67	913	2,255	3,285	3,649	4,138	4,227	3,914	4,135	4,383	4,915
	Rural non-farm	129	1,408	2,952	3,923	4,768	5,239	5,103	4,752	4,815	5,047	5,508
	Rural farm	62	783	3,044	3,555	4,740	3,972	5,151	5,934	5,851	6,249	5,010
Prince Edward Island	All types of residence	68	869	2,220	3,207	3,542	3,586	3,897	3,433	3,649	4,223	3,464
	Urban	65	607	1,568	2,618	3,065	2,951	3,106	2,638	2,718	3,219	2,687
	Rural non-farm	94	1,134	2,910	3,710	3,743	4,028	4,251	3,410	4,337	4,106	3,523
	Rural farm	48	987	2,235	3,302	3,914	3,862	4,397	4,365	4,051	5,167	4,244
Nova Scotia	All types of residence	89	954	2,111	2,782	3,119	3,287	3,121	3,051	3,256	3,523	3,881
	Urban	72	799	1,932	2,588	2,884	2,979	2,799	2,705	2,909	3,273	3,575
	Rural non-farm	124	1,253	2,395	3,076	3,414	3,680	3,561	3,493	3,654	3,817	4,214
	Rural farm	46	828	2,072	2,872	3,666	3,826	3,584	3,563	3,798	3,823	4,142
New Brunswick	All types of residence	85	959	2,333	3,085	3,479	3,585	3,605	3,673	3,708	3,898	4,249
	Urban	73	773	2,009	2,648	2,917	2,865	2,831	2,858	2,965	3,100	3,540
	Rural non-farm	112	1,246	2,721	3,567	4,101	4,313	4,493	4,344	4,379	4,682	4,943
	Rural farm	45	869	2,503	3,550	4,088	4,536	4,329	5,183	4,835	4,840	4,886
Québec	All types of residence	35	594	1,678	2,497	3,066	3,393	3,292	3,405	3,756	4,147	4,766
	Urban	35	559	1,530	2,217	2,662	2,856	2,714	2,832	3,154	3,566	4,249
	Rural non-farm	50	865	2,296	3,479	4,247	4,844	4,598	4,606	5,064	5,549	6,177
	Rural farm	14	499	2,315	4,011	5,362	6,317	6,652	6,820	7,041	7,244	7,176

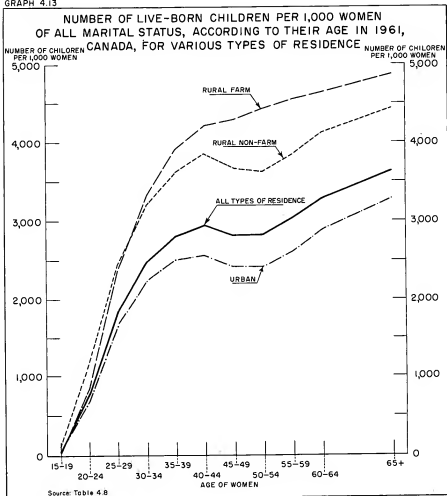
Table 4.8 - Number of live-born children per 1,000 women of all marital status, according to their age in 1961, Canada and provinces, for various types of residence - Concluded

Region and type of residence		Age of women in 1961										
		15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 +
Ontario	All types of residence	76	788	1,788	2,309	2,526	2,536	2,385	2,312	2,413	2,590	2,840
	Urban	73	748	1,654	2,149	2,359	2,336	2,184	2,113	2,223	2,423	2,702
	Rural non-farm	123	1,285	2,392	2,976	3,167	3,264	3,072	2,947	2,991	3,148	3,255
	Rural farm	34	863	2,288	3,068	3,371	3,471	3,392	3,307	3,278	3,341	3,605
Manitoba	All types of residence	58	805	1,872	2,463	2,755	2,794	2,571	2,577	2,882	3,175	3,871
	Urban	59	684	1,646	2,172	2,378	2,316	2,093	2,044	2,327	2,737	3,391
	Rural non-farm	91	1,264	2,516	3,217	3,576	3,848	3,419	3,336	3,701	3,832	4,829
	Rural farm	29	967	2,326	3,055	3,622	3,751	3,756	3,972	4,241	4,372	5,139
Saskatchewan	All types of residence	80	885	2,078	2,708	2,974	3,090	3,036	3,261	3,634	3,995	4,517
	Urban	83	736	1,805	2,409	2,590	2,561	2,480	2,650	2,908	3,516	4,132
	Rural non-farm	112	1,034	2,287	2,894	3,130	3,411	3,164	3,454	3,940	4,443	4,739
	Rural farm	53	1,176	2,468	3,069	3,395	3,533	3,632	3,897	4,396	4,444	5,123
Alberta	All types of residence	86	957	1,994	2,584	2,850	2,894	2,832	2,965	3,253	3,477	3,896
	Urban	87	847	1,819	2,341	2,507	2,518	2,415	2,493	2,791	3,045	3,544
	Rural non-farm	122	1,260	2,374	3,103	3,572	3,445	3,267	3,418	3,800	4,030	4,654
	Rural farm	63	1,262	2,525	3,207	3,558	3,690	3,734	3,969	4,123	4,418	4,674
British Columbia	All types of residence	79	941	1,896	2,357	2,507	2,452	2,238	2,198	2,300	2,496	2,806
	Urban	62	808	1,728	2,171	2,315	2,243	2,039	1,998	2,101	2,312	2,694
	Rural non-farm	146	1,378	2,466	2,888	3,055	3,080	2,798	2,692	2,802	3,001	3,224
	Rural farm	49	971	2,233	2,997	3,388	3,298	3,343	3,435	3,443	3,497	3,834

SOURCE: These rates were obtained by multiplying rates for ever-married women (sample) by the proportions of women ever married for the whole population. These latter proportions were taken from DBS, *Census of Canada, 1961*, Bulletin 1.3-1, Table 78 and Bulletin 7.1-5, Tables III and I.

TRENDS AND FACTORS OF FERTILITY IN CANADA

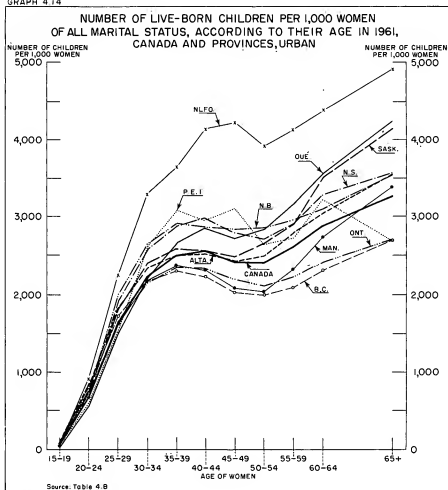
GRAPH 4.13



We have equally estimated the number of live-born children per woman, for metropolitan areas. The results are in Table 4.9. In some cities, certain cohorts will not have had enough children to ensure their replacement: this is the case of women aged between 45 and 55 for eight of these seventeen cities. Furthermore, in Toronto, Vancouver and Victoria, women of 55 to 65 years of age are in a similar situation, and indeed, in the first two cities, women aged between 35 and 45 had not yet given birth to the number of children considered essential to their replacement, namely, about 2.15 children.

FERTILITY OF WOMEN OF ALL MARITAL STATUS

GRAPH 4.14



NUPTIALITY BY TYPE OF RESIDENCE

Obviously, it is the proportion of women who have already been married which explains the difference between the fertility of women ever married and that of women of all marital status. This is not a negligible phenomenon: it explains the low fertility of rural farm women before the age of 20 (few amongst their number are married before that age); furthermore, this phenomenon tends to accentuate the rural-urban difference, because, after the age of 30, there are more single people in town than in the countryside. In Canada as a whole, it is in the rural non-farm areas that the marriage rate is most precocious: in the case of women aged 15 to 19 years,

GRAPH 4.15

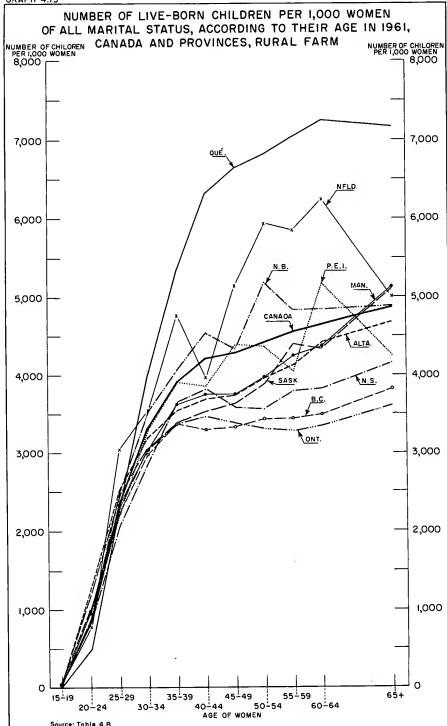


Table 4.9 – Number of live-born children per 1,000 women of all marital status, according to their age in 1961, Canada, metropolitan areas

Metropolitan area	Age of women in 1961						
	15-19	20-24	25-34	35-44	45-54	55-64	65 +
Calgary	87	786	1,870	2,188	2,081	2,393	2,992
Edmonton	74	730	1,939	2,475	2,342	2,961	3,539
Halifax	76	647	1,965	2,520	2,270	2,519	2,762
Hamilton	66	728	1,934	2,302	2,112	2,349	2,703
Kitchener.....	49	750	1,918	2,214	2,094	2,373	2,877
London	81	651	1,852	2,262	1,962	2,037	2,361
Montréal.....	38	518	1,559	2,213	2,178	2,624	3,593
Ottawa	65	651	1,861	2,351	2,011	2,233	2,842
Québec	14	292	1,357	2,481	2,574	3,382	4,478
Saint-Jean (N.-B.)	96	790	2,430	2,806	2,639	2,643	2,841
St. John's (Nfld.)	40	535	2,255	3,090	3,391	3,063	4,184
Sudbury	96	883	2,228	2,794	2,874	3,091	4,691
Toronto	68	619	1,545	1,929	1,906	1,932	2,237
Vancouver.....	52	617	1,662	2,012	1,830	1,961	2,543
Victoria	62	783	2,039	2,327	1,820	1,870	2,118
Windsor	48	748	2,202	2,716	2,460	2,671	2,988
Winnipeg	45	612	1,736	2,171	1,915	2,313	3,022

SOURCE: See note in Table 4.8.

13.8% from this environment were ever married; the percentage is 10.7 in the towns, and 5.0 on farms. In the 20-24 age group, these three types of residence rank in the same order, but from 25 years upwards, it is in the towns that the lowest proportions of women ever married are found. Rural non-farm women retain first place between 25 and 30 years, then yield their place to rural farm women for the remaining age groups. Except for the 20 to 24 age group, the difference between types of residence, in regard to the percentage of ever-married women, is not very high: indeed the difference between the type of residence with the lowest rate and that with the highest does not exceed 7.5%. This can be checked by consulting Table 4.10, where we find the percentage of women who have been married, by age groups, by types of residence, for Canada and the provinces. With some slight variations, the relative nuptiality for the three types of residence are the same with respect to the provinces as what we observe for Canada as a whole. However, in the Maritime Provinces (except for Prince Edward Island), the percentage of women ever married, over 30 years of age, is as high, if not higher amongst rural non-farm women as amongst rural farm women. The same is true of the coastal province situated at the other end of the country, British Columbia.

Table 4.10 - Percentage of women ever married according to their age
in 1961, Canada and provinces, for various types of residence

Region and type of residence		Age groups										
		15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 +
Canada	All types of residence	8.7	59.5	84.6	89.5	90.8	91.1	90.5	89.6	89.6	89.8	89.8
	Urban	8.7	57.7	83.2	88.4	89.8	89.9	89.2	88.1	88.0	88.3	88.6
	Rural non-farm	11.8	70.0	89.2	92.3	92.7	93.5	92.9	92.3	92.6	93.0	93.0
	Rural farm	4.7	54.1	87.3	93.8	95.3	96.1	96.2	95.6	95.3	94.6	93.6
Newfoundland	All types of residence	11.3	60.5	86.4	91.4	92.2	93.4	93.5	92.2	92.2	93.3	94.2
	Urban	8.1	53.3	83.6	89.3	90.2	91.3	91.7	89.7	89.2	90.4	91.0
	Rural non-farm	13.2	71.6	90.4	94.2	94.5	96.0	95.8	95.2	95.1	96.0	97.2
	Rural farm	6.0	48.5	82.9	94.3	94.5	95.7	95.9	94.2	99.4	99.1	98.1
Prince Edward Island	All types of residence	8.3	58.7	84.2	88.0	88.2	91.4	91.4	88.3	88.6	87.5	87.0
	Urban	8.5	50.7	79.3	84.1	85.6	87.0	87.3	84.0	85.0	81.1	82.5
	Rural non-farm	9.9	65.6	87.0	91.8	87.5	92.8	92.8	88.6	89.5	89.2	88.5
	Rural farm	6.5	64.2	87.8	91.1	92.3	94.8	94.4	93.1	91.6	91.4	90.5
Nova Scotia	All types of residence	10.9	62.0	85.4	89.1	90.4	91.1	90.7	88.9	88.3	88.9	88.6
	Urban	9.8	56.3	82.7	86.9	88.7	89.4	88.7	86.7	85.8	87.0	86.9
	Rural non-farm	13.9	73.9	90.2	92.8	93.1	93.7	93.8	92.1	92.0	91.8	90.7
	Rural farm	5.5	51.9	80.9	88.6	91.0	91.9	91.9	90.5	89.3	89.3	89.5
New Brunswick	All types of residence	9.4	59.7	85.1	88.9	89.7	90.6	90.2	88.3	88.6	88.5	88.9
	Urban	8.9	54.8	82.0	86.1	87.7	87.8	87.3	84.0	84.5	84.8	85.2
	Rural non-farm	11.4	69.0	89.7	92.4	92.2	93.7	93.4	92.8	92.9	92.5	92.8
	Rural farm	4.7	47.8	80.8	90.1	90.9	93.7	93.7	93.2	92.9	92.0	91.7
Québec	All types of residence	5.0	48.1	77.7	84.7	86.3	86.8	85.7	85.0	85.0	85.3	85.9
	Urban	5.2	48.4	77.1	83.8	85.4	85.6	84.3	83.6	83.4	83.7	84.2
	Rural non-farm	6.4	55.3	82.4	88.1	88.6	89.3	87.6	87.8	88.4	89.8	91.3
	Rural farm	2.1	33.3	76.3	89.4	92.3	94.4	94.9	94.2	93.9	93.2	92.9

Table 4.10 - Percentage of women ever married according to their age in 1961,
Canada and provinces, for various types of residence - Concluded

Region and type of residence		Age groups										
		15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 +
Ontario	All types of residence	10.6	65.4	87.9	91.7	92.9	92.7	92.0	90.9	90.5	90.2	88.8
	Urban	10.7	63.7	86.8	91.0	92.3	91.9	91.3	90.0	89.5	89.3	88.2
	Rural non-farm	13.8	78.0	93.3	94.6	94.9	95.2	94.0	93.2	92.8	93.2	90.7
	Rural farm	5.0	59.2	90.4	95.1	96.4	97.0	96.9	96.2	95.7	94.5	92.1
Manitoba	All types of residence	9.1	61.4	86.6	90.5	91.4	91.8	91.3	90.7	90.7	91.4	92.8
	Urban	9.6	59.1	85.1	89.0	90.1	90.2	89.5	89.0	89.0	89.9	91.8
	Rural non-farm	11.8	69.4	88.7	92.8	92.1	92.8	95.6	92.1	92.6	94.4	95.2
	Rural farm	5.4	65.5	91.8	95.6	96.4	96.7	96.4	95.8	95.3	95.0	95.4
Saskatchewan	All types of residence	10.0	63.6	87.6	91.5	92.7	92.8	92.8	93.2	94.1	94.9	96.4
	Urban	11.3	58.8	85.4	89.9	90.5	90.2	90.5	90.8	92.1	93.6	95.6
	Rural non-farm	11.7	67.8	86.1	88.9	90.6	91.8	91.7	93.1	94.7	95.3	97.3
	Rural farm	7.0	73.9	93.7	96.2	97.0	96.4	96.4	96.4	96.4	96.8	97.0
Alberta	All types of residence	12.2	68.6	88.8	92.9	93.8	94.2	94.2	94.3	94.9	95.0	96.0
	Urban	12.9	66.0	87.5	92.1	92.8	93.1	92.9	93.2	93.8	94.5	95.5
	Rural non-farm	15.2	75.1	90.2	92.5	94.1	94.5	94.8	93.9	95.2	94.5	97.0
	Rural farm	8.6	76.7	94.2	96.6	96.9	97.5	97.5	97.5	97.5	97.2	97.3
British Columbia	All types of residence	10.8	66.9	88.1	91.6	92.9	93.7	93.7	92.9	93.2	93.6	93.7
	Urban	9.6	63.3	87.5	90.4	92.0	92.7	92.7	91.8	92.1	92.8	93.2
	Rural non-farm	16.7	80.5	93.3	95.4	95.7	96.9	97.0	96.3	96.8	94.4	96.1
	Rural farm	5.6	53.6	87.8	94.0	96.6	97.6	97.9	96.8	97.8	97.3	96.5

SOURCE: DBS, Census of Canada, 1961, Bulletin 1.3-1, Table 78 and Bulletin 7.1-5, Tables III and I.

The interpretation of these data is not easy. It is particularly important to note the following: the high proportions of ever-married women found in the rural farm milieu does not necessarily mean that this environment is favourable to nuptiality. It certainly does not encourage marriage at an early age. What seems to happen is that a very large proportion of single women who have lived on farms, leave this environment to settle in the towns, where they find a mode of life better suited to their unmarried state. These departures, which take place mainly between 20 and 25 years of age, make it easier for the women remaining at home to marry and cut down the nuptiality of the men, who have become too numerous. The same phenomenon does not seem applicable to rural non-farm women, in view of their high nuptiality under the age of 20 — unless we were to suppose that the emigration of unmarried women from this environment happens very early in their lives. What is more probable is that the rural non-farm environment encourages early marriages and a high nuptiality.⁶

There are also quite important differences between the different metropolitan areas, in regard to the percentage of women who have been previously married, even after the ages of 30 or 40. The two extreme cities are Sudbury (where the nuptiality is highest) and Québec (where this rate is lowest). In the latter city, about one quarter of the women remain unmarried, whereas 5% of the Sudbury women remain single. The information will be found in Table 4.11.

4. AN ATTEMPT TO EVALUATE THE PART PLAYED BY TYPE OF RESIDENCE

When the fertility of women from various types of residence is compared, many factors other than the physical environment are found to vary: the composition of a group of women of a given age differs, in several respects, between one environment and another: education, income, husband's occupation, religion, country of birth . . . , etc. It might be reasoned that the fertility variations found from comparing one type of residence to another, are largely if not wholly due to these other factors. This does not seem to be the case, however. The information we have available enables us to examine the fertility variations from one type of residence to another, while maintaining constant a great number of the factors just enumerated. For instance,

⁶ Contrary to the case of the female sex, it is on the farms that are found the lowest proportions of men ever married and in urban areas that one finds the highest; before the age of 25, urban and non-farm rural men have approximately identical proportions. (See DBS, *Census of Canada, 1961*, General Review, Bulletin 7.1-5, pp. 5-12)

Table 4.11 – Percentage of women ever married according to their age in 1961, Canada, metropolitan areas

Metropolitan area	Age groups						
	15-19	20-24	25-34	35-44	45-54	55-64	65 +
Calgary	13.8	66.9	89.4	92.9	92.7	95.4	94.5
Edmonton	11.8	64.9	89.7	92.6	93.1	94.2	95.3
Halifax	12.3	57.5	85.6	87.6	85.7	84.4	83.8
Hamilton	9.9	64.6	90.7	93.8	92.3	90.7	89.7
Kitchener	11.0	64.2	90.5	92.5	90.8	89.1	88.0
London	12.0	59.5	87.2	91.4	89.2	87.8	85.7
Montréal	6.2	52.1	81.4	86.1	84.8	84.1	84.7
Ottawa	8.2	58.3	85.6	88.5	84.3	82.7	83.5
Québec	2.4	30.6	70.3	77.8	75.9	75.4	75.5
Saint-Jean (N.B.)	11.2	58.2	85.5	87.4	85.3	83.8	82.1
St. John's (Nfld.)	6.1	42.9	81.5	86.7	86.6	84.0	85.6
Sudbury	13.0	68.1	92.5	95.6	95.5	94.6	96.1
Toronto	10.4	62.6	87.8	91.2	90.2	88.7	87.6
Vancouver	8.4	60.7	87.4	91.5	91.7	92.1	93.3
Victoria	10.1	66.8	90.4	92.3	90.6	90.9	90.4
Windsor	8.4	61.9	89.0	93.8	93.2	94.0	92.6
Winnipeg	9.3	57.7	86.8	90.3	89.4	89.4	91.6

SOURCE: DBS, *Census of Canada, 1961*, Bulletin 1.3-1, Table 80.

in respect of urban areas of varying size and of the non-farm rural environment, it is possible to measure the fertility of women in the 45 to 49 age group born in Canada, of Protestant religion, of English mother tongue, with a high-school education, and whose husbands have also a secondary education and earn between \$3,000 and \$5,000 a year. On the average, these women have had 2.19 children (all types of residence). In relation to this figure (= 100) the fertility index for women with the same characteristics, and for the various types of residence, is the following: metropolitan areas: 88; urban centres of 30,000 to 100,000 inhabitants: 97; urban centres of 5,000 to 30,000 inhabitants: 105; urban centres of 1,000 to 5,000 inhabitants: 115; finally, rural non-farm areas: 126. The differences are considerable, despite the many factors kept constant. Roughly comparable differences are observed for other groups of women, as will be found on studying Table 4.12. All possibilities are not listed, but those possibilities we have presented do indeed cover a sufficiently wide range of characteristics to pretty well indicate the general fertility variations in relation to type of residence.

Fertility variations in relation to type of residence are not as marked, however, depending on whether the women are younger or older, more or less

Table 4.12 - Index of fertility variations by type of residence^a, for selected groups of women aged 35-39 and 45-49 living with their husband, Canada, 1961

[Index (all types of residence = 100) representing the number of live-born children]

Characteristics			Number of live-born children per 1,000 women (all types of residence)		Index					
of the wife		of the husband	Income in thousands of dollars	All types of residence	Metropolitan areas	Urban centres 100,000 and over	Urban centres 30,000-100,000	Urban centres 5,000-30,000	Rural non-farm areas	
Country of birth, mother tongue and religion	Education	Education								
WOMEN AGED 35-39 YEARS										
All categories	Elementary	Elementary	1-3	3,873	100	72	71	89	94	107
"	"	"	5-7	3,746	100	84	87	96	117	121
"	"	Secondary	1-3	3,160	100	80	83	87	92	112
"	"	"	5-7	3,221	100	91	92	103	110	121
"	"	Elementary	1-3	3,096	100	80	79	91	95	101
"	"	"	5-7	3,135	100	90	90	101	107	109
"	"	Secondary	1-3	2,527	100	86	86	99	106	105
"	"	"	5-7	2,732	100	94	94	105	109	110
"	"	"	10+	2,878	100	97	96	102	109	114
"	"	University degree	10+	2,931	100	97	96	110	108	109
"	"	Secondary	3-5	2,202	100	91	90	110	110	119
Immigrants	"	"	3-5	2,473	100	91	91	93	104	113
Canada, English, Protestant	"	"	3-5	3,108	100	93	92	106	100	116
Canada, English, Catholic	"	"	3-5	2,901	100	90	125	97	109	117
Canada, French, Catholic	"	"	3-5							139

WOMEN AGED 45-49 YEARS

All categories	Elementary	Elementary	1-3	4,180	100	73	72	96	101	101	125
"	"	"	5-7	3,577	100	79	82	104	126	130	124
"	"	Secondary	1-3	3,029	100	79	80	96	106	124	120
"	"	"	5-7	2,948	100	88	89	104	114	128	117
"	Secondary	Elementary	1-3	3,098	100	77	78	92	92	105	119
"	"	"	5-7	2,872	100	84	86	100	119	117	124
"	"	Secondary	1-3	2,468	100	86	84	101	100	107	121
"	"	"	5-7	2,391	100	94	94	105	110	112	109
"	"	"	10+	2,294	100	96	95	103	114	107	119
"	"	University degree	10+	2,475	100	98	99	110	112	95	112
"	"	Secondary	3-5	2,087	100	92	93	104	125	118	114
Immigrants	"	"	3-5	2,191	100	88	87	97	105	115	126
Canada, English, Protestant	"	"	3-5	2,836	100	89	87	112	112	108	122
Canada, English, Catholic	"	"	3-5	2,985	100	86	88	101	114	141	151
Canada, French, Catholic	"	"	3-5								

^aDue to lack of information concerning the husband's income, in the case of women living on a farm, we have had to set this type of residence aside.

SOURCE: Unpublished data derived from the 1961 Census.

educated, or where the husband's income is larger or lesser. A rather simple calculation proves this assertion. By using the data in Table 4.12, one can calculate, for each type of residence, the average index corresponding to a given age group, or to a specific level of schooling or else to a specific income level. The results of these calculations are shown in Table 4.13. Data relating to groups by country of origin, mother tongue and religion have been omitted for the purposes of this calculation. It will readily be noted that the variations are slightly more pronounced for women in the 45-49 age group than for those in the 35-39 age group; they are, indeed, higher as the educational level gets lower and husband's income becomes smaller. The extent of variations in the index is particularly high in the case of poorly educated couples (77 to 124) and for those whose income is very low (79 to 122). As we turn to examine people whose educational level is higher and who are in a higher income bracket we find that fertility variations by type of residence are appreciably reduced, mainly because the sub-fertility of the large cities becomes much less pronounced.

Table 4.13 – Index of fertility variations by type of residence: average of indices corresponding to certain characteristics, Canada, 1961

Characteristics	Metropolitan areas	Urban centres 100,000 and over	Urban centres 30,000-100,000	Urban centres 5,000-30,000	Urban centres 1,000-5,000	Rural non-farm areas
Age:						
35-39 years	87.1	87.4	98.3	104.7	110.9	118.7
45-49 "	85.4	85.9	101.1	109.4	112.6	119.0
Education						
Wife and husband: elementary	77.0	78.0	96.3	109.5	114.8	123.5
Wife: elementary husband: secondary	84.5	86.0	97.5	105.5	121.3	120.3
Wife: secondary husband: elementary	82.8	83.3	96.0	103.3	108.0	120.3
Husband and wife: secondary	92.2	91.5	102.5	108.0	109.2	115.7
Wife: secondary husband: university degree	97.5	97.5	110.0	110.0	102.0	113.5
Husband's income						
\$1,000 to \$3,000	79.1	79.1	93.9	98.3	107.8	122.5
\$5,000 to \$7,000	88.0	89.3	102.3	114.0	118.5	117.3
\$10,000 and over	97.0	96.5	106.3	110.8	106.3	114.8

SOURCE: Table 4.12.

The persistence of fertility variations in relation to type of residence may also be checked by keeping the husband's occupation constant instead of his educational level, while taking into consideration the other characteristics in Table 4.12. This may be observed by examining Table 4.14. This table only involves the women who are living with their husbands and who are in the 45-50 age group; only three occupational groups were taken into consideration in this table along with various combinations of educational level for the wife and income for the husband. Once again, the variations by type of residence are greater as the social rank is lower.

Clearly, keeping certain factors constant such as educational level, income or occupation does reduce the difference between types of residence, since the large urban centres — and these are a factor of low fertility — are also the environments in which are found a concentration of couples whose characteristics are associated with low levels of fertility. This will be checked anyway by comparing two indices representing the fertility of each type of residence. The first (A) represents the actual fertility of each type of residence; the second (B) is the arithmetic mean of the indices appearing in the first ten lines of each age group in Table 4.12. These are the figures obtained for the age groups 35-39 years and 45-49 years:

	35-39 years		45-49 years	
	A	B	A	B
All types of residence	100	100	100	100
Metropolitan areas	—	87	—	85
Urban centres of 100,000 and over	83	87	78	86
Urban centres of 30,000 to 100,000	97	98	96	101
Urban centres of 5,000 to 30,000	99 ⁷	105	101 ⁷	109
Urban centres 1,000 to 5,000	110 ⁸	111	109 ⁸	113
Rural non farm	126	119	127	119
Rural farm	133	—	143	—

One could go farther and enquire how fertility varies by type of residence, for specific cultural groups defined by country of birth, religion and mother tongue of the wife while keeping as constant factors the husband's income and the educational level of the spouses. In Table 4.15, only couples where both spouses have had a secondary education, where the wife is between 35 and 40 years of age⁹ and the husband's income is between \$3,000 and \$5,000 are listed.

⁷ Urban centres of 10,000 to 29,999 inhabitants.

⁸ Urban centres of 1,000 to 9,999 inhabitants.

⁹ Similar variations are found (although slightly higher) in the case of women aged between 45 and 50.

Table 4.14 – Index of fertility variations by type of residence, for selected groups of women aged 45-49 living with their husband, Canada, 1961

[Index (all types of residence = 100) representing the number of live-born children]

Characteristics of couples			Number of live-born children per 1,000 women (all types of residence)	Index						
Education of women	Husband's occupation	Husband's income		All types of residence	Metro-politan areas	Urban centres 100,000 and over	Urban centres 30,000-100,000	Urban centres 5,000-30,000	Urban centres 1,000-5,000	Rural non-farm areas
Secondary	Professional and Technical	\$10,000 and over	2,502	100	96	95	104	123	—	121
"	Clerical	\$5,000 - \$7,000	2,344	100	94	93	109	95	—	113
Elementary	Craftsmen	\$5,000 - \$7,000	3,417	100	84	82	105	125	119	113
"	Craftsmen	\$3,000 - \$5,000	3,478	100	84	84	107	102	124	132

SOURCE: Unpublished data derived from the 1961 Census.

Table 4.15 – Index of fertility variations by type of residence, for selected groups of women aged 35-39 living with their husband, Canada, 1961^a

[Index (all types of residence = 100) representing the number of live-born children]

Sub-population	Number of live-born children per 1,000 women (all types of residence)	Index						
		All types of residence	Metropolitan areas	Urban centres 100,000 and over	Urban centres 30,000-100,000	Urban centres 5,000-30,000	Urban centres 1,000-5,000	Rural non-farm areas
Immigrants	2,202	100	91	90	110	110	119	130
Anglo-Protestants born in Canada	2,473	100	91	91	93	104	113	115
Anglo-Catholics born in Canada	3,108	100	93	92	106	100	116	118
French-Catholics born in Canada	2,901	100	90	91	97	109	117	139

^a In all cases, these are couples where both spouses have had secondary schooling and where the husband is earning between \$3,000 and \$5,000.

SOURCE: Unpublished data derived from the 1961 Census.

Once again, fertility variations by type of residence are quite noticeable, even though six variables were kept constant. It is amongst Anglo-Protestants that these variations are least pronounced and yet, the fertility of Anglo-Protestants is lower by 26% in the metropolitan areas than in the rural non-farm areas. The extent of these variations is about the same for English-speaking Catholics: they are much higher amongst immigrants (43%) and French-speaking Catholics (54%).

What order of magnitude can we establish on the whole for fertility variations attributable to type of residence amongst women who have just completed, or are about to complete their reproductive period? Without claiming to be very exact, which would probably be an illusion in this case, the following conclusion may be drawn: in relation to all types of residence, the big urban centres have the effect of reducing fertility by 10 to 15%. Those of 30,000 to 100,000 inhabitants do not differ greatly from the average. Small towns (from 1,000 to 5,000 inhabitants) have an excess fertility of the order of 10%; and finally, the rural non-farm environment induces an excess fertility of nearly 20%. It goes without saying that rural farm areas are even more favourable to fertility. We did not take this into account in our analysis, because it was impossible to counteract the influence of income variations for lack of information. Another conclusion that clearly arises from this analysis is that the type of residence has more influence on couples with a modest social condition than on more privileged couples. This phenomenon is particularly remarkable in regard to the depressive effect of larger urban centres where couples of modest social condition are much less fertile than in the average urban centres. Low income, in particular, leads to low fertility levels in the larger cities. For instance, amongst couples where both spouses have had a secondary education, and where the woman is between 35 and 40 years of age, the women have, on the average, borne 2.8 children when the husband's income is \$10,000 and over; they have borne 2.6 children when the income is between \$5,000 and \$7,000 and only 2.2 children when the income is from \$1,000 to \$3,000. Similar differences are found in average-sized urban centres and even in smaller ones, but these differences are slightly smaller.

Despite a trend towards a lowering in the fertility differences due to type of residence, they do not appear to be on the way out. Even amongst the couples more privileged in education and wealth and who are better able to govern their own fertility, the rural environment is much more favourable to a high birth rate than the urban environment.

Chapter 5

NUPTIALITY AND FERTILITY

In a population where 95% of the births are legitimate, it is obvious that nuptiality exercises a marked influence on fertility. In Chapter 3, we examined the effect which variations in nuptiality have on current fertility, and found that such variations sometimes play a very important role. Thus, three quarters of the increase in the general fertility rate in Canada, between 1941 and 1951, was due to the increase in the proportion of married women at different ages. Another example: in 1961, the low nuptiality in Québec, as compared to the rest of Canada, had the effect of reducing fertility by 13%.

We are not interested here in the relationship between the proportion of married women and current fertility, but rather in the effect which the duration of marriage and age at marriage have on cohort fertility. The influence of both these phenomena will be examined in Sections 1 and 2, respectively. Section 3 will consider the variations in age at marriage in relation to a number of characteristics: region, type of residence, education, etc.

1. FERTILITY VARIATIONS BY DURATION OF MARRIAGE

It is important in measuring these relations to bear in mind the age at marriage. Indeed, the number of children born to a woman after she has been married five or ten years will not be the same if she married at eighteen as if she had married at thirty-five. Furthermore, a study of this type can only be made on the basis of data collated from a number of censuses: what must be observed is the fertility of each generation of women at various times in their life, between the date of their marriage and the date when they reach the age of fifty (or later). In Canada, there were only two censuses (those of 1941 and 1961) which provide the necessary information, namely, age at the time of the census, age at first marriage and number of live-born children. These are very limited data, but data that can nevertheless be used in some way. The following example indicates the type of information

available. It concerns women who were married before they were twenty years of age, and who were born between June 1, 1911 and May 31, 1916. These women were between 25 and 30 years of age in 1941, and between 45 and 50 years of age in 1961. The average duration of their marriage was approximately 10 years in 1941, and 30 years in 1961.¹ It should be stated, at the outset, that these average durations are crude approximations. They would be exact, had the women who married at less than twenty years of age, been married, on the average at 17.5 years; but amongst these women, the number who married after they were 17.5 years was greater than the number married before that age. The average age at first marriage for these women can be estimated at 18.3 years. The result is that the average duration of marriage of the women we are studying here, was 9.2 years in 1941, and 29.2 years in 1961.

Similar information is available for the women who married when they were under twenty years of age, and who, in 1941, were between 15 and 19 years of age, between 20 and 24 years of age, --- etc. In Table 5.1 will be found the number of live-born children to women of various generations who had married when they were under 20 years of age, at the time of the 1941 Census and of the 1961 Census. There also appear the ages of these women

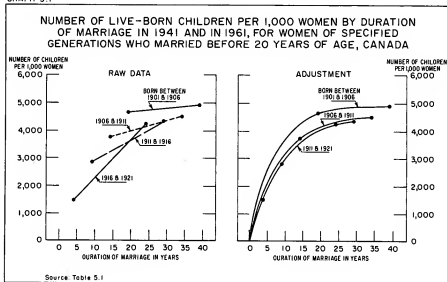
¹This refers to an average duration. In fact, the duration of their marriage had been of 5 to 15 years in 1941, and of 25 to 35 years in 1961. Due to the lack of precision in the information provided by the 1941 Census, we were forced to adopt these margins of error.

Table 5.1 – Age, duration of marriage and number of live-born children per 1,000 women, in 1941 and 1961, for women of specified generations who married before 20 years of age, Canada

Year of birth of women	In 1941			In 1961		
	Age	Duration of marriage	Number of live-born children per 1,000 women	Age	Duration of marriage	Number of live-born children per 1,000 women
1916-1921	20-24	4.2 yrs.	1,509	40-44	24.2 yrs.	4,268
1911-1916	25-29	9.2 "	2,844	45-49	29.2 "	4,327
1906-1911	30-34	14.2 "	3,751	50-54	34.2 "	4,524
1901-1906	35-39	19.2 "	4,670	55-59	39.2 "	4,897
1896-1901	40-44	24.2 "	5,413	60-64	44.2 "	5,352

SOURCES: DBS, *Census of Canada, 1941*, Vol. III, Table 51;
Census of Canada, 1961, Bulletin 4.1-8, Table H2.

GRAPH 5.1



at the time of both censuses as well as the duration of their marriage (or, to be more exact, the time lapse since their first marriage).

These data appear in the left-hand side of Graph 5.1, except for data about women born between 1896 and 1901. The latter present an anomaly: after 24.2 years of marriage (i.e. when they were from 40-44 years of age, in 1941) their fertility was somewhat higher than that measured in the 1961 Census, when they were between 60 and 64 years.² For each generation (or group of generations) there are only two points, since female fertility was observed on only two occasions. However, by using the four groups of generations, some idea of the general form of the curves can be conceived. The task becomes that much easier inasmuch as the completed fertility of these four groups of generations is quite similar, varying between 4.3 and 4.9 children per woman. The result of these interpolations appears in the right-hand side of Graph 5.1. In practice, the generations 1911-1916 and 1916-1921 produce overlapping curves: after five years of marriage, these generations had had 1.8 children; they had had 3.0 after 10 years; 3.7 children after 15 years and 4.1 after 20 years. Their completed fertility was about 4.3 children.

²This unexpected reduction may be due to the migration of certain women, higher mortality amongst the more fertile, as well as by inexactitudes in one or the other census.

TRENDS AND FACTORS OF FERTILITY IN CANADA

The women born between 1906 and 1911 behaved in a way apparently similar to women born between 1911 and 1921, the former having a completed fertility that was slightly higher (4.5 children). The women born between 1901 and 1906, whose completed fertility was 4.9 children, had borne 2.2 after five years of marriage, 3.7 after 10 years and 4.4 after 15 years.

The four groups of generations examined here had borne 40 to 45% of the children they were to bear after five years of marriage, 70 to 80% after 10 years, 85 to 90% after 15 years, and 94 to 96% after 20 years.

The study just undertaken was limited to women who had married before they were 20 years of age. A similar study could be made of the

Table 5.2 – Age, duration of marriage and number of live-born children per 1,000 women, in 1941 and 1961, for women of specified generations according to their age at marriage, Canada

Year of birth of women	In 1941			In 1961		
	Age	Duration of marriage ^a	Number of live-born children per 1,000 women	Age	Duration of marriage ^a	Number of live-born children per 1,000 women
Women married between 20 and 25 years						
1911-1916	25-29	5 yrs.	1,488	45-49	25 yrs.	3,483
1906-1911	30-34	10 "	2,585	50-54	30 "	3,549
1901-1906	35-39	15 "	3,337	55-59	35 "	3,738
1896-1901	40-44	20 "	3,923	60-64	40 "	3,953
Women married between 25 and 30 years						
1911-1916	25-29	? yrs.	485	45-49	? yrs.	2,594
1906-1911	30-34	5.4 "	1,278	50-54	25.4 "	2,634
1901-1906	35-39	10.4 "	2,137	55-59	30.4 "	2,638
1896-1901	40-44	15.4 "	2,579	60-64	35.4 "	2,698
Women married between 30 and 35 years						
1906-1911	30-34	? yrs.	406	50-54	? yrs.	1,795
1901-1906	35-39	5.3 "	1,036	55-59	25.3 "	1,827
1896-1901	40-44	10.3 "	1,609	60-64	30.3 "	1,903
Women married between 35 and 40 years						
1901-1906	35-39	? yrs.	323	55-59	? yrs.	1,037
1896-1901	40-44	5.3 "	688	60-64	25.3 "	1,119

^a In estimating these durations, we have taken into account the fact that among the women who married after the age of 25, between age x and $x + 5$, a greater number married around age x , than around age $x + 5$.

SOURCES: DBS, Census of Canada, 1941, Vol. III, Table 51;
Census of Canada, 1961, Bulletin 4.1-8, Table H2.

VARIATIONS BY DURATION OF MARRIAGE

women who married at a later age. Table 5.2 provides the same information as does Table 5.1, for women who married for the first time between the ages of 20 and 25 years, between 25 and 30 years, between 30 and 35 years and finally between 35 and 40 years. The data have been handled in the same way as in Table 5.1, and thus provided the curves in Graph 5.2. A look at these curves provides a clearer view of the way fertility varies in relation to duration of marriage, bearing in mind age at marriage. The results of these examinations will be found in Table 5.3. There is an element of arbitrariness in these results, just as there is in the graph curves from which they are derived, particularly for marriages of short duration, in the case of women born between 1896 and 1906. The precision of the corresponding numbers in Table 5.3 is therefore highly illusory.

Table 5.3 – Number of live-born children per woman, for specified durations of marriage, and for women of specified generations, according to their age at marriage, Canada

Age at marriage and generations	Duration of marriage (in years)					
	5	10	15	20	25	30
Number of live-born children per woman						
Married at <20 years						
Generations 1901-1906	2.20	3.70	4.40	4.70	4.82	4.88
“ 1906-1911	1.95	3.22	3.87	4.22	4.42	4.50
“ 1911-1916	1.80	3.02	3.71	4.08	4.29	4.33
“ 1916-1921	1.80	3.02	3.71	4.08	4.27	4.31
Married at 20-24 years						
Generations 1896-1901	1.94	3.24	3.74	3.92	3.94	3.95
“ 1901-1906	1.84	2.81	3.34	3.58	3.70	3.74
“ 1906-1911	1.60	2.59	3.13	3.40	3.54	3.55
“ 1911-1916	1.52	2.48	3.08	3.37	3.48	3.48
Married at 25-29 years						
Generations 1896-1901	1.26	2.17	2.56	2.68	2.70	2.70
“ 1901-1906	1.22	2.08	2.48	2.60	2.64	2.64
“ 1906-1911	1.22	2.08	2.48	2.60	2.63	2.63
Married at 30-34 years						
Generations 1896-1901	1.04	1.60	1.83	1.90	1.90	1.90
“ 1901-1906	1.00	1.55	1.76	1.83	1.83	1.83
Married at 35-39 years						
Generations 1896-1901	0.66	1.00	1.12	1.12	1.12	1.12
“ 1901-1906	0.61	0.92	1.04	1.04	1.04	1.04

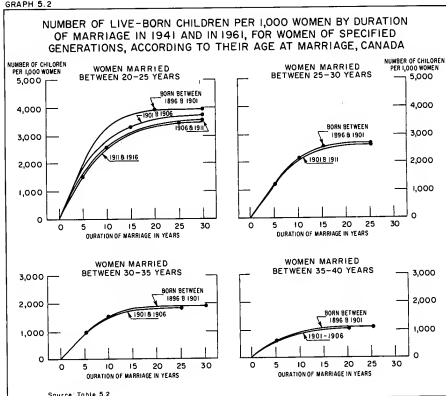
SOURCE: Interpolations made with the help of Graphs 5.1 and 5.2, from data in Tables 5.1 and 5.2.

TRENDS AND FACTORS OF FERTILITY IN CANADA

Despite this lack of precision, some idea can be made, with the help of these estimates, of the way in which births are spaced over the course of the fertile period in a woman's life on the basis of her marriage. There follows, for certain durations of marriage, the percentage represented by children ever born, in relation to completed fertility:

Age at first marriage	Duration of marriage (in years)				
	5	10	15	20	25
Under 20 years	40 to 45%	70 to 80%	85 to 90%	94 to 96%	98 to 99%
20-24 years	44 to 50%	71 to 82%	88 to 95%	96 to 99%	99 to 100%
25-29 years	46 to 47%	78 to 80%	94 to 95%	99%	100%
30-34 years	55%	85%	96%	100%	100%
35-39 years	59%	89%	100%	100%	100%

GRAPH 5.2



We have only indicated the limit values within which are positioned the different generations of women. Generally speaking, the oldest generations are characterized by the highest percentages, but it may be that this result depends upon the manner in which we have interpolated fertility corresponding to various durations. That is why, in the above table, we preferred not to give percentages by generation. The examination of this table nevertheless shows a less contestable phenomenon: for a given duration, percentages increase as age at marriage increases. This was a predictable phenomenon.

What is striking is the concentration of births in the early stage of marriage, even amongst women who married young. Mothers who married when they were under 25 years gave birth to about half their children during the first five years of marriage; three quarters of their children are born within the following five years of marriage and nine tenths of their children are already born after fifteen years of marriage.

2. VARIATIONS IN FERTILITY BY AGE AT MARRIAGE

One may be led to think that, in a population where birth control is extensively used, age at marriage, provided it be not too high, does not have a great influence on the completed fertility of women. Whether a woman gets married at the age of 20 or of 25, for instance, she will have time to bear the number of desired children. This is not the case, however, as may be seen in Table 5.3. The information in Table 5.4 is about the same as in the last column of Table 5.3. The completed fertility by age at marriage for several generations of women ever married will be found in this table. In order to facilitate comparison of the various generations, we have also converted the average number of live-born children into an index, letting the fertility of women married between 20 and 24 be equal to 100.

In relation to the women who married between 20 and 24 years, the women married under 20 had an excess fertility of 24 to 35%. This excess fertility decreases as we go from the oldest to the youngest generation, i.e., from the most fertile to the less fertile. This result was to be expected: the more people limit their progeny, the likelier are they to have the same fertility, regardless of the age at marriage. All the same, fertility is not unrelated to age at marriage. The women who married after the age of 25 are markedly less fertile than women married between the ages of 20 and 24; the reduction is 26 to 32% in the case of women married between 25 and 29 years; 46 to 52% where the women married between 30 and 34 years; 68 to 72% where they married between 35 and 39 years; and 83 to 89% less fertile where marriage occurred at 40-44 years of age. These results can be summarized by stating that, roughly speaking, for a woman between 15 and 30 years of age, a five-year delay in getting married is associated with a

Table 5.4 – Number of live-born children per 1,000 women according to their age at marriage, for women of various quinquennial generations who were aged 45 and over in 1961, Canada

Age at marriage	Generations (year of birth of women)				
	Before 1896	1896-1901	1901-1906	1906-1911	1911-1916
Number of live-born children per 1,000 women					
Under 20 years	6,012	5,352	4,897	4,524	4,327
20-24 "	4,514	3,953	3,738	3,549	3,483
25-29 "	3,238	2,698	2,638	2,634	2,594
30-34 "	2,282	1,903	1,827	1,795	1,899
35-39 "	1,426	1,119	1,037	989	1,006
40-44 "	770	657	485	406	416
45-49 "	286	202	246	214	209
Index (fertility of women married at 20-24 = 100)					
Under 20 years	133	135	131	128	124
20-24 "	100	100	100	100	100
25-29 "	72	68	71	74	74
30-34 "	51	48	49	51	54
35-39 "	32	28	28	28	29
40-44 "	17	17	13	11	12
45-49 "	6	5	7	6	6

SOURCE: DBS, *Census of Canada, 1961*, Bulletin 4.1-8, Table H2.

decrease of 30% in her fertility as compared to the fertility of women married between 20 and 24 years of age. Where the woman is between 30 and 40, a five-year delay is associated to a 20% decrease in her fertility as compared to the fertility of women married between their 20th and 25th birthdays. It is important to remember that we are concerned here with a correlation between age at marriage and fertility, and that the postponement of age at marriage is not necessarily the cause or the only cause of a decrease in fertility.

It should be noted that women in a given generation who married at various ages bore their children at different periods and this may have affected their fertility. This perhaps explains the low indices for women born between 1896 and 1906, who were married between the ages of 25 and 35. The greater number of these women lived through the most fertile years of their lives during the economic depression.

We have attempted to establish whether fertility differences in relation to age at marriage might not be related to the completed fertility of married women. Indeed, it would be natural to expect that fertility differences in relation to age at marriage, would diminish as the general level of fertility decreased. Similar calculations to those which we have just worked out for the whole of Canada have been made for various Canadian

sub-populations, but no systematic relation has been discovered. Certain of these calculations will be found in Table 5.5. The following findings can be derived:

Table 5.5 – Index of completed fertility of women married at a given age, as a ratio of the completed fertility of women married at 20-24 years: women of selected generations; Canada, for various types of residence; Québec, rural form; and British Columbia, cities of more than 100,000 inhabitants
(Women married at 20-24 years = 100)

Age at marriage t and year of birth of women	Canada urban centres of 100,000+	Canada urban centres of 10,000	Canada rural non- farm	Canada rural farm	Québec rural farm	British Columbia, urban centres of 100,000+
Under 20 years						
Before 1896	130	138	130	123	119	125
1896-1901	132	139	134	127	121	133
1901-1906	130	134	131	123	120	137
1906-1911	127	125	130	122	121	128
1911-1916	122	125	126	113	118	123
25-29 years						
Before 1896	72	71	71	76	82	75
1896-1901	71	69	67	69	71	76
1901-1906	71	70	69	75	78	75
1906-1911	77	74	77	75	73	83
1911-1916	81	75	73	76	69	82
30-34 years						
Before 1896	52	50	49	54	55	57
1896-1901	48	48	50	50	45	53
1901-1906	48	51	48	55	50	57
1906-1911	53	51	52	56	51	59
1911-1916	59	58	53	54	50	63
35-39 years						
Before 1896	33	30	30	33	30	33
1896-1901	31	22	25	32	43	42
1901-1906	28	26	31	29	31	28
1906-1911	29	29	32	28	26	32
1911-1916	30	32	31	28	23	35
40-44 years						
Before 1896	18	16	16	18	20	16
1896-1901	16	18	23	13	8	17
1901-1906	13	9	15	15	10	12
1906-1911	11	12	15	13	9	13
1911-1916	13	10	12	17	7	11

SOURCE: DBS, *Census of Canada, 1961*, Bulletin 4.1-8, Table H2.

1. In the transition from the older to the younger generations, the indices tend to approach 100, except for Québec rural farm women and the women in the greater urban centres of British Columbia. As fertility dropped from the older to the younger generations, one might conclude that this convergence of indices is related to the decrease in fertility. But this interpretation does not stand up to mathematical examination: amongst women of the same generation, the comparison of different sub-populations with different fertility levels does not confirm this conclusion.
2. The excess fertility of women who married under 20 years of age is particularly low amongst women living on farms. This may be due to the fact that these women married shortly before reaching their twentieth birthday. In regard to other ages at marriage, there seems to be no systematic difference between the different types of residence.

Obviously, the differences in fertility imputed here to the differences in age at marriage may be due to other underlying factors. For instance, amongst women who marry very young, a large proportion are not well educated; the high fertility of women who marry before reaching the age of 20 may be due, not solely to their early marriage, but also to certain other characteristics inducing high fertility.

3. VARIATIONS IN AGE AT MARRIAGE

We have just seen that age at marriage has some significant effect on fertility. Therefore, it would be interesting to find out whether, amongst the various groups comprising the Canadian population, age at marriage varies very considerably. We shall first examine how average age at marriage varies by province, type of residence, education and marital status in 1961. It was also possible to calculate median age at marriage for Canada as a whole by type of residence and education, and also for certain specific groups: English-speaking Protestant women born in Canada, and French-speaking Catholic women born in Canada and immigrant women. Finally, we shall examine the distribution by age at marriage of women ever married of certain generations.

AVERAGE AGE AT MARRIAGE BY TYPE OF RESIDENCE, CANADA AND PROVINCES

Average age at first marriage was calculated on the basis of data provided by the 1961 Census on age at the time of census and on the date

of first marriage. The calculation was worked out for three age groups (25-29 years, 35-39 years, and 45-49 years). By comparing these different age groups, one can get some idea of the variations in age at marriage over the course of time, but in interpreting the differences, it is necessary to take into account the systematic elimination of those marriages that might take place at an age higher than the age which the women concerned had in 1961. This bias obviously plays a greater role in the case of women in the 25-29 age group than for those in the 35-39 age group. For Canada as a whole, for all types of residence, the average age at marriage was 24.1 for women who were in the 45-49 age group (see Table 5.6); this average was 22.4 years for women in the 35-39 age group, and 20.6 years for those in the 25-29 age group. The difference between the first and second age group (1.7 years) is about the same as that observed between the second and third group (1.8 years). It is probable, however, that this second difference is considerably more influenced than the first by the bias we indicated earlier (elimination of late marriages). All provinces record differences that are roughly similar between the three age groups.

Variations in average age at marriage from one type of residence to another are about the same for the three major age groups or for the various regions. It is the rural women (farm or non-farm) who marry earliest and average age at marriage increases with the size of the urban centres. For instance, amongst women aged 45-49 in Canada as a whole, the average age is 23.1 for rural farm women, or a year less than the average for all types of residence. It is a little higher (23.3 years) for rural non-farm women and there is an abrupt rise (0.6 year) in the villages or small towns of less than 5,000 inhabitants, and this is true of several of the provinces as well. It is only in comparing average-sized towns (30,000 to 99,999 inhabitants) and large cities that another important increase is noted: in the former, the average age is 24.0, whereas in the large cities, it is 24.7. In Canada taken as a whole, there is no difference between the central city and the fringe area of metropolitan areas. However, in five provinces, age at marriage is lower in the fringe area, whereas the contrary occurs in two provinces.

These observations are equally true of the two other age groups (35-39 years and 25-29 years). It should nevertheless be pointed out that amongst these younger women, those living in the fringe area marry younger than do those living in the central city of metropolitan areas. There is also a difference between the three age groups: the differences in age at first marriage, from one type of residence to another decrease as women are younger. If the extreme cases are compared, there is a difference of 1.6 years for women aged 45-49, of 1.4 years for women in the 35-39 age group, and 1.2 years for those in the 25-29 age group.

Table 5.6 - Average age at first marriage of women ever married, for selected age groups,
Canada and provinces, by type of residence, 1961

Age and type of residence	Average age at first marriage (in years)												
	Canada	Nfld.	P.E.I.	N.S.	N.B.	Qué.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.
25-29 years													
All types of residence	20.6	20.1	20.3	20.1	20.0	21.0	20.5	20.5	20.3	20.4	20.5	20.3	21.4
Metropolitan area	20.9	21.0	—	20.6	20.4	21.2	20.9	20.8	—	20.8	20.8	—	—
Central city	21.1	21.2	—	20.7	20.5	21.4	20.9	21.0	—	20.9	21.2	—	—
Fringe area	20.8	20.5	—	20.6	20.4	21.0	20.8	20.6	—	20.2	20.5	—	—
Urban centres 100,000+	21.0	—	—	20.4	—	21.2	20.9	20.8	20.8	20.8	20.8	—	—
“ ” 39,000-99,999	20.6	21.0	—	—	20.6	20.9	20.4	—	20.6	20.6	—	—	—
“ ” 5,000-29,999	20.5	20.3	21.0	19.9	20.3	21.1	20.2	20.3	20.5	20.2	20.4	—	22.0
“ ” 1,000- 4,999	20.4	20.0	21.5	20.3	20.0	21.0	20.0	20.4	20.4	20.2	20.3	21.1	—
Rural non-farm	19.9	19.6	19.5	19.7	19.5	20.5	19.8	19.8	19.9	19.9	19.9	19.7	21.1
Rural farm	20.1	20.6	20.3	19.8	19.6	20.6	20.0	20.0	19.9	19.8	20.1	—	—
35-39 years													
All types of residence	22.4	21.7	21.8	21.7	21.5	22.8	22.3	22.2	22.1	22.2	22.5	21.7	22.5
Metropolitan area	22.9	23.1	—	22.4	22.0	23.2	22.7	22.6	—	23.0	22.8	—	—
Central city	23.0	23.1	—	22.5	21.9	23.4	22.8	22.6	—	23.0	23.1	—	—
Fringe area	22.8	23.1	—	22.3	22.2	23.1	22.7	22.6	—	22.7	22.5	—	—
Urban centres 100,000+	22.9	—	—	22.2	—	23.2	22.8	22.7	22.7	23.0	22.8	—	—
“ ” 39,000-99,999	22.3	23.0	—	—	22.4	22.7	22.1	—	22.7	22.2	—	—	—
“ ” 5,000-29,999	22.1	22.2	22.1	21.4	21.8	22.6	21.7	22.2	22.0	22.0	22.3	—	23.5
“ ” 1,000- 4,999	22.1	21.3	21.9	22.3	21.7	22.5	21.8	22.6	22.0	21.9	22.1	23.1	—
Rural non-farm	21.6	21.2	21.7	21.2	20.9	22.0	21.6	21.3	21.7	21.3	22.0	20.3	21.9
Rural farm	21.6	21.8	21.6	21.5	20.9	21.7	21.5	21.5	21.8	21.2	21.9	—	—
45-49 years													
All types of residence	24.1	23.7	23.4	23.5	23.6	24.7	24.0	23.8	23.3	23.4	24.1	22.5	25.1
Metropolitan area	24.7	25.1	—	24.4	24.4	25.3	24.5	24.3	—	24.1	24.5	—	—
Central city	24.7	25.3	—	24.6	24.1	25.3	24.4	24.4	—	24.1	24.6	—	—
Fringe area	24.7	24.2	—	24.2	24.7	25.3	24.5	24.1	—	23.6	24.4	—	—
Urban centres 100,000+	24.7	—	—	24.1	—	25.2	24.5	24.3	23.9	24.1	24.5	—	—
“ ” 39,000-99,999	24.0	25.1	—	—	24.3	24.9	23.6	—	24.2	23.3	—	—	—
“ ” 5,000-29,999	23.8	23.2	23.7	23.4	24.6	24.4	23.7	24.0	23.3	23.2	23.6	—	25.3
“ ” 1,000- 4,999	23.9	24.0	23.7	23.1	23.9	24.5	23.7	23.8	23.8	23.3	23.5	24.9	—
Rural non-farm	23.3	23.1	23.1	23.0	22.9	24.0	23.3	22.9	23.2	22.6	23.8	20.5	24.5
Rural farm	23.1	23.6	23.4	23.0	23.2	23.3	23.4	23.0	22.8	22.6	23.4	—	—

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

The differences between provinces are slightly less marked than those we have just observed between the types of residence. Once more, if extreme cases are considered, the following differences will be noted: 1.4 years for the women in the 45-49 age group, 1.3 years for those in the 35-39 age group and 1.0 year for those in the 25-29 age group. These observations do not take the Yukon and Northwest Territories into account. The province of Québec is characterized by a high age at marriage, in all age groups and for most types of residence. Of the nine types of residence listed in Table 5.6, the highest age is found in Québec in six cases of women in the 45-49 age group, in seven cases for women aged 35-39, in eight cases for women aged 25-29. No province is clearly characterized by a low average age, but it may be noted that, amongst women in the 45-49 age group, the lowest ages are found in Alberta, whereas amongst younger women, New Brunswick is pre-eminent in this regard. Finally, the average age is not very high in the Yukon whereas the opposite is true of the Northwest Territories.

AVERAGE AGE AT MARRIAGE BY SCHOOLING AND MARITAL STATUS

In Tables 5.7 and 5.8 will be found data concerning these two characteristics, for Canada as a whole and for certain types of residence. The first of these tables relates to women aged 45-49 and the second to women aged 35-39.

We shall first examine differences by marital status.³ It is amongst women with husband present, i.e., who were living with their husband at the time the census was taken, that average age at marriage is highest. For Canada as a whole, this average age is 24.2 years for women aged 45-49 and 22.4 for women in the 35-39 age group. The women not living with their husband were married at a markedly younger age and the same observation may be made of the divorced women and widows.

Table 5.9 shows differences in average age at marriage between women living apart from their husband, divorced women and widows as compared with women living with their husband. Examination of this table indicates that, in the case of women 45-49 years of age, those who are separated from their husband married 1.2 years earlier than did those who are living with their husband; the difference is less marked (0.9 year) in the case of women aged 35-39. On the other hand, this difference is a great deal higher in the case of urban than of rural women. And if divorcees are taken

³Questions asked in the census were such as to permit the subdivision of women ever married into four groups: those who are still married and living with their husband, those who are still married but not living with their husband, widows, and finally, divorcees. It cannot be ascertained whether in cases where spouses are not living together, the separation is due to a conjugal conflict or not.

Table 5.7 - Average age at first marriage by marital status, and by schooling,
for women aged 45-49, Canada for various types of residence, 1961

Marital status and schooling	Type of residence						
	All types of resi- dence	Rural farm	Rural non- farm	Urban centres 5,000-29,999	Metropolitan areas		
					Total	Central city	Fringe area
Husband present							
Elementary	23.3	22.5	22.7	23.0	24.1	24.1	24.0
Secondary	24.7	23.9	24.0	24.5	25.1	25.3	25.0
Some university	26.4	26.3	26.2	27.1	26.5	26.6	26.5
University degree	27.4	27.2	28.2	27.9	27.3	27.4	27.3
All levels	24.2	23.2	23.4	24.0	24.8	24.9	24.8
Husband absent							
Elementary	22.2	22.2	21.9	21.5	22.5	22.6	22.4
Secondary	23.7	22.4	23.1	23.3	24.0	24.0	23.9
Some university	24.3				25.1	24.9	25.5
University degree	26.9				27.2	28.0	25.8
All levels	23.0	22.3	22.3	22.4	23.4	23.4	23.4
Widows							
Elementary	22.3	21.7	21.7	21.7	22.8	22.7	23.0
Secondary	23.8	23.0	23.9	23.2	24.0	24.0	23.9
Some university	25.5				25.6	24.6	27.9
University degree	25.4				25.3	25.3	25.3
All levels	23.2	22.2	22.6	22.7	23.5	23.5	23.7
Divorcees							
Elementary	21.6	18.4	18.4	22.9	22.0	22.2	21.2
Secondary	22.7	26.4	21.9	22.4	22.8	22.9	22.5
Some university	25.3				25.5	25.9	24.0
University degree	25.1				24.5	25.4	21.7
All levels	22.6	21.5	20.9	22.7	22.8	23.0	22.3
Women ever married							
Elementary	23.2	22.5	22.6	22.8	23.9	23.9	23.9
Secondary	24.6	23.9	24.0	24.4	25.0	25.1	24.9
Some university	26.3	26.2	26.0	26.9	26.4	26.4	26.5
University degree	27.2	27.3	28.0	27.8	27.1	27.2	27.1
All levels	24.1	23.1	23.3	23.8	24.7	24.7	24.7

SOURCE: DBS, Census of Canada, 1961, unpublished table.

Table 5.8 - Average age at first marriage by marital status, and by schooling, for women aged 35-39, Canada, for various types of residence, 1961

Marital status and schooling	Type of residence						
	All types of residence	Rural farm	Rural non-farm	Urban centres 5,000 - 29,999	Metropolitan areas		
					Total	Central city	Fringe area
Husband present							
Elementary	21.9	21.2	21.1	21.8	22.6	22.9	22.3
Secondary	22.6	21.8	22.0	22.3	23.0	23.1	22.9
Some university	24.0	23.8	23.8	24.1	24.1	24.4	23.9
University degree	25.3	26.0	25.7	24.9	25.4	25.7	25.1
All levels	22.4	21.6	21.6	22.2	23.0	23.1	22.8
Husband absent							
Elementary	20.8	20.6	20.6	20.6	21.0	21.0	21.0
Secondary	21.9	21.7	21.6	21.4	22.0	22.0	22.1
Some university	23.7				24.3	24.7	23.6
University degree	24.8				25.6	25.9	24.8
All levels	21.5	21.1	21.1	21.1	21.8	21.7	21.9
Widows							
Elementary	20.7	21.4	20.2	20.8	20.9	21.0	20.6
Secondary	21.5	20.1	21.6	21.4	21.4	21.5	21.3
Some university	21.8				22.4	21.9	23.0
University degree	24.5				25.1	25.1	25.3
All levels	21.2	20.7	20.8	21.1	21.3	21.4	21.3
Divorcees							
Elementary	20.3	20.7	19.6	19.3	20.9	21.4	19.7
Secondary	21.4	19.3	21.0	20.2	21.6	21.7	21.4
Some university	23.1				23.6	23.7	23.3
University degree	21.7				22.0	22.1	21.9
All levels	21.3	19.8	20.4	19.9	21.6	21.8	21.3
Women ever married							
Elementary	21.8	21.2	21.1	21.7	22.5	22.7	22.2
Secondary	22.6	21.8	22.0	22.2	22.9	23.0	22.8
Some university	24.0	23.8	23.7	23.9	24.1	24.3	23.9
University degree	25.3	25.9	25.5	24.8	25.3	25.6	25.1
All levels	22.4	21.6	21.6	22.1	22.9	23.0	22.8

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

VARIATIONS IN AGE AT MARRIAGE

Table 5.9 – Difference of overage age at first marriage between women with specified marital status, and women living with their husband, for women aged 45-49 and 35-39, Canada, for various types of residence, 1961 (in years)

Age and marital status	Type of residence						
	All types of residence	Rural farm	Rural non-farm	Urban centres 5,000-29,999	Metropolitan areas		
					Total	Central city	Fringe area
45-49 years							
Husband abs.	-1.2	-0.9	-1.1	-1.6	-1.4	-1.5	-1.4
Widows	-1.0	-1.0	-0.8	-1.3	-1.3	-1.4	-1.1
Divorcees	-1.6	-1.7	-2.5	-1.3	-2.0	-1.9	-2.5
35-39 years							
Husband abs.	-0.9	-0.5	-0.5	-1.1	-1.2	-1.4	-0.9
Widows	-1.2	-0.9	-0.8	-1.1	-1.7	-1.7	-1.5
Divorcees	-1.1	-1.8	-1.2	-2.3	-1.4	-1.3	-1.5

SOURCE: Tables 5.7 and 5.8.

into account, it will be found that in almost all cases, age at first marriage was still lower than in those cases where the women are merely living apart from their husband: the difference is 1.6 years in the case of women between 45-49 years and 1.1 years in the case of women aged 35-39. It is difficult to avoid concluding therefrom that early marriages are more likely to break up than later marriages, ending either in divorce or separation.⁴ Finally, it can also be concluded that widows married younger than did women still living with their husband. There is nothing surprising about this: in regard to their respective husband, women who married young were probably much younger than were women who married later in life; consequently the former are more likely to become widows.

What should now be examined is average age at first marriage, in relation to the woman's education. In Table 5.10 are found the differences of average age at first marriage in relation to women with only a primary school education, for different types of residence. We find that average age at first marriage varies a good deal more in relation to education than in relation to the other factors already studied, namely, types of residence, province or marital status. The women aged 45-49, who have a university degree, married, on the average, four years later than did those who only had an elementary education. The difference is three and a half years in

⁴It should be added that these comparisons are very much affected by a bias: in the case of women of a given age in 1961, the earlier the marriage – and therefore the longer the lifetime of the marriage – the greater the risk of becoming widowed, divorced or separated.

Table 5.10 – Difference of average age at first marriage between women with specified schooling and those with primary schooling, for women aged 45-49 and 35-39, Canada, for selected types of residence, 1961 (in years)

Age and schooling	Type of residence						
	All types of residence	Rural farm	Rural non-farm	Urban centres 5,000-29,999	Metropolitan areas		
					Total	Central city	Fringe area
45-49 years							
Secondary	1.4	1.4	1.4	1.6	1.1	1.2	1.0
Some university	3.1	3.7	3.4	4.1	2.5	2.5	2.6
University degree	4.0	4.8	5.4	5.0	3.2	3.3	3.2
35-39 years							
Secondary	0.8	0.6	0.9	0.5	0.4	0.3	0.6
Some university	2.2	2.6	2.6	2.2	1.6	1.6	1.7
University degree	3.5	4.7	4.4	3.1	2.8	2.9	2.9

SOURCE: Tables 5.7 and 5.8.

the case of women aged 35-39. The more educated the woman, the greater the postponement in her marriage. Furthermore, differences in age at marriage in relation to education are more pronounced in the case of rural women than in the case of women who live in metropolitan areas.

We shall not examine here the variations in average age at first marriage for each province, by marital status and level of schooling. However, as the province of Québec is quite different from the others, as far as nuptiality is concerned, we have made a summary review of the situation in that province. The same phenomena as observed for the rest of Canada are found in this case, as well. All the same, for a given schooling level and marital status, age at marriage is almost always higher in Québec than in Canada as a whole. There is only one significant exception: the Québec women aged 45-49 who have been to university, married slightly younger than did other Canadian women with similar characteristics.

DISTRIBUTION BY AGE AT FIRST MARRIAGE

Average age at first marriage is only one very simplified aspect of nuptiality: it represents the average behaviour of a group of women whose behaviour patterns are, in reality, very different from one another. This

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variety of patterns can only be correctly represented by the distribution of women according to their age at first marriage. On the basis of the age of women at the time the census was taken and of the date of their first marriage, it is possible to calculate the age at first marriage. Very detailed and special tables were drawn up with a view to working out these figures, covering not only all women ever married in Canada, but likewise covering the different sub-populations characterized by their age in 1961, residence, religion, mother tongue and schooling. Therefore, it is possible to find, for women of a given age in 1961, the distribution of these women according to their age at the time of their first marriage. What is given here are cumulative distributions whose immediate significance is the following: amongst women who have been married, what proportion were married at the age of 15, at 18, at 25, etc.

In Table 5.11, are the cumulative distributions, by age at marriage of women ever married in the 45-49 age group; these distributions are given for certain types of residence, three schooling levels, as well as for immigrant women, Anglo-Protestant women born in Canada and French-Catholic women born in Canada. For the last two groups, the distinction was made between urban and rural farm women. In Table 5.12, will be found analogous information for women ever married who are 30 or in the 30-34 age group, as the case may be. It should be pointed out that these distributions, by age at marriage, are of women who have already been married at a specified age. Therefore, these distributions do not represent the progressive entrance of all women in a given generation into the married state; they represent the women who married at a specific age. If these distributions were to be used to cover all women in a given generation, they would have to be multiplied by the proportion of ever-married women corresponding to the age of women in 1961.

If Graphs 5.3 and 5.4 are consulted - graphs illustrating these distributions by curves - some very major differences can be observed amongst the various sub-populations, in regard to the proportion of women who had already married at a given age. In the case of women in the 45-49 age group, the major differences arise generally at the 25-year level. In Canada as a whole, 56% of these women were already married at the age of 25, whereas the percentage married at 25 years of age amongst rural farm women was 65%; it was 63% amongst rural non-farm women, 58% amongst women living in urban centres of 5,000 to 30,000 inhabitants, and 51% amongst women living in metropolitan areas.

The differences are still greater in so far as schooling is concerned: the percentage of women married at 25 years is 63% for women with only elementary schooling; 52% for women with secondary schooling and 36% for

Table 5.11 – Percentage of women ever married, aged 45-49 in 1961, who married before the specified age, for selected sub-populations, Canada

Age ^b	Type of residence					Schooling			Immigrants	Anglo-Protestants ^a		French Catholics ^a	
	Canada	Metro-politan areas	Urban centres 5,000-29,999	Rural non-farm	Rural farm	Elementary	Secondary	University		Urban	Rural farm	Urban	Rural farm
18.5 years	7.6	6.4	8.0	9.5	8.3	11.1	5.0	1.4	9.5	6.4	6.4	5.8	7.9
22.5 "	37.1	32.3	38.2	43.8	44.0	46.0	31.1	15.2	41.1	33.4	40.3	28.9	40.4
23.5 "	45.1	39.8	46.4	52.2	53.3	—	—	—	—	—	—	—	—
24.5 "	52.5	46.8	54.4	59.5	61.3	—	—	—	—	—	—	—	—
25.5 "	59.5	54.1	61.2	65.6	68.6	—	—	—	—	—	—	—	—
26.5 "	67.4	62.9	68.9	72.1	75.3	—	—	—	—	—	—	—	—
27.5 "	74.3	70.5	76.1	77.9	80.6	79.0	71.3	57.9	74.5	73.2	78.7	68.7	81.5
28.5 "	79.9	76.8	81.8	82.3	85.0	—	—	—	—	—	—	—	—
29.5 "	83.9	81.3	85.6	85.8	88.4	—	—	—	—	—	—	—	—
30.5 "	86.5	84.3	88.0	88.2	90.4	—	—	—	—	—	—	—	—
31.5 "	88.5	86.5	90.1	90.1	92.2	—	—	—	—	—	—	—	—
32.5 "	90.7	89.0	91.9	91.9	93.9	91.9	90.0	85.3	88.5	91.0	93.2	88.8	94.7
37.5 "	96.6	95.9	97.1	97.4	97.9	97.2	96.3	94.5	95.6	96.7	98.0	95.9	98.2
42.5 "	98.8	98.7	99.0	99.2	99.4	99.0	98.8	98.2	98.6	98.9	99.4	98.7	99.5
47.5 "	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^a Born in Canada.

^b Age before which women were married.

Table 5.12 - Percentage of women ever married, aged 30-34 in 1961, who married before the specified age, for selected sub-populations, Canada

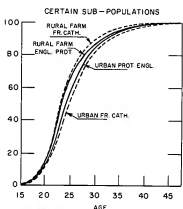
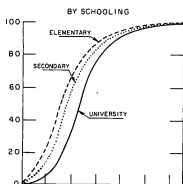
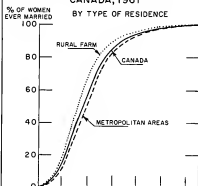
Age ^b	Women aged 30 years			Women aged 30-34 years							
	Canada	Type of residence		Schooling			Immigrants	Anglo-Protestants ^a		French Catholics ^a	
		Metropolitan areas	Rural farm	Elementary	Secondary	University		Urban	Rural farm	Urban	Rural farm
15.5 years	0.6	0.6	0.5	-	-	-	-	-	-	-	-
16.5 "	2.7	2.1	3.1	-	-	-	-	-	-	-	-
17.5 "	6.5	4.8	7.6	11.7	6.7	1.4	7.6	7.7	11.1	5.9	9.4
18.5 "	13.4	10.1	17.8	20.1	12.9	3.3	13.1	15.0	19.8	10.9	16.7
19.5 "	23.4	18.6	29.7	30.4	21.2	6.4	20.1	24.3	31.0	18.1	25.5
20.5 "	35.8	30.4	44.3	41.4	31.6	11.2	28.3	35.3	44.8	27.6	36.3
21.5 "	48.6	43.2	56.0	52.4	43.0	19.2	38.3	47.0	57.5	37.7	48.4
22.5 "	60.1	55.2	67.3	62.8	54.6	30.4	49.0	58.4	69.4	48.8	60.4
23.5 "	70.7	66.6	77.6	71.4	65.1	42.7	59.0	68.9	78.2	58.8	69.0
24.5 "	78.7	75.4	84.8	78.1	73.8	55.3	67.3	77.1	84.8	68.2	77.0
25.5 "	85.0	82.6	89.4	83.8	81.0	66.9	75.0	83.8	89.6	76.3	83.8
26.5 "	90.2	88.6	93.6	88.1	86.3	75.8	81.2	88.5	93.2	82.7	88.5
27.5 "	93.7	92.8	95.7	91.3	90.4	82.5	86.1	92.0	95.5	87.6	91.5
28.5 "	96.6	96.2	97.8	94.1	93.6	87.7	90.3	94.5	96.7	91.7	94.6
29.5 "	98.6	98.7	99.1	96.1	96.0	92.0	93.5	96.6	98.1	94.6	96.5
30.5 "	100.0	100.0	100.0	97.9	97.8	95.4	96.2	98.1	98.9	96.9	98.3
31.5 "	-	-	-	99.2	99.1	98.1	98.4	99.1	99.6	98.7	99.2
32.5 "	-	-	-	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^a Born in Canada.^b Age before which women were married.

VARIATIONS IN AGE AT MARRIAGE

GRAPH 5.3

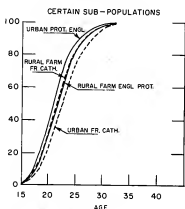
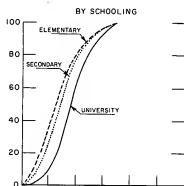
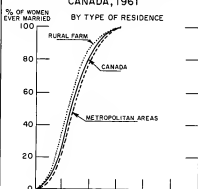
PERCENTAGE OF WOMEN EVER MARRIED
AGED 45-49, WHO MARRIED
BEFORE THE SPECIFIED AGE,
FOR SELECTED SUB-POPULATIONS,
CANADA, 1961



Source: Table 5.11

GRAPH 5.4

PERCENTAGE OF WOMEN EVER MARRIED
AGED 30 OR 30-34, WHO MARRIED
BEFORE THE SPECIFIED AGE,
FOR SELECTED SUB-POPULATIONS,
CANADA, 1961



Source: Table 5.12

women who attended university. Comparing the three cultural groups is not quite so simple. Immigrant women⁵ show the highest percentages of married women up to 22 years of age; but, beyond the 32-year level the percentages of married women are the lowest in this group. In regard to Protestant women whose mother tongue is English and Catholic women whose mother tongue is French (in both instances, women born in Canada) the comparative figures depend on residence, namely on whether the women are rural farm or urban. In the rural farm environment, French-Catholic women marry earliest: at the age of 25, 65% of them are married whereas the corresponding percentage is 61% for Anglo-Protestant women. On the other hand, in the urban environment, 58% of the latter group are married by the time they are 25, while the corresponding figure is 48% for French-Catholic women.

Amongst women aged 30, or in the 30-34 age group, it is at 22 years of age that the differences in percentages of married women are highest; consequently, the comparisons will be drawn from this age level. In Canada as a whole, amongst women aged 30 who had already been married, 55% were married before they were 22 years of age. The percentage is 62% for rural farm women and 50% for women living in metropolitan areas. As in the case of women aged 45-49, the differences are particularly high for the different schooling levels: 58% at the elementary level, 49% at the secondary level, and 25% at the university level. However, the relative position of the three cultural groups is somewhat different amongst women in the 30-34 age group, when compared to the position prevalent amongst the older women we observed earlier. The foreign-born women chalk up very low percentages at all ages (44% at 22 years); and their curve follows closely the curve of urban French-Catholic women. The latter have markedly lower percentages of married women than Anglo-Protestants, in both the rural farm and the urban environment. The difference is 10% amongst rural farm women (64% compared to 54%) and urban women (53% as against 43%). Urban Anglo-Protestant women behave in pretty much the same way as rural farm French-Catholic women.

With the help of available data, it is possible to compare two generations in regard to percentage of women already married at various age levels. There can be no direct comparison of the cumulative distributions we have just studied since these women are only those who at the age of 30, or in the 45-49 age group, were already married. On the whole it would seem obvious that the former are a sampling of women married at a relatively early age, since the figures systematically exclude those who may have married between the ages of 30 and 50. For the comparison to be

⁵The corresponding curve has not been indicated on the graph.

VARIATIONS IN AGE AT MARRIAGE

a valid one, it must take all women into account and not merely those who already had been married. To obtain the desired information, all that need be done is to multiply the percentages of the distributions already studied by the percentage of women ever married at 30, or at 45-49 years, as the case may be. This calculation was only done for Canada as a whole; furthermore, we limited the figures to two generations: the women who, in 1961, were 30 years old and those who were 45-49 years old. Here are the results:

Age	Percentage of women ever married at the specified age	
	Women aged 30 in 1961	Women aged 45-49 in 1961
15.5 years	0.5	0.3*
16.5 "	2.4	1.4*
17.5 "	5.7	4.0*
18.5 "	11.8	7.6*
19.5 "	20.6	13.1*
20.5 "	31.5	19.3*
21.5 "	42.8	26.5*
22.5 "	52.9	33.6
23.5 "	62.2	40.8
24.5 "	69.3	47.5
25.5 "	74.8	53.8
26.5 "	79.4	61.0
27.5 "	82.5	67.2
28.5 "	85.0	72.3
29.5 "	86.8	75.9
30.5 "	88.0	78.3
32.5 "	—	82.1
37.5 "	—	87.4
42.5 "	—	89.4
47.5 "	—	90.5

* Obtained by adjustment on graph.

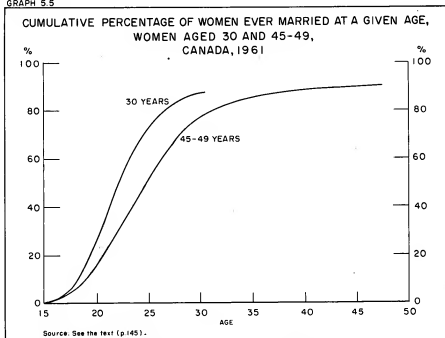
The results are indicated on Graph 5.5. The behaviour of these two generations was quite different. Up to about 25 years of age, the percentage of women ever married represents a ratio of about two to three, the women in the younger generation having married more quickly than did those who were 45-49 years old in 1961. In the case of the latter group, half were married by the time they were 24.9 years old while the younger ones reached that percentage at 22.2 years.

MEDIAN AGE AT FIRST MARRIAGE

By using cumulative distributions by age at marriage, we can easily compute median age at first marriage, i.e., the age at which half of the

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GRAPH 5.5



women had already been married. Generally speaking, the median is slightly higher than the average age, which we already examined: the difference is of the order of one or two tenths of a year. There is consequently not much point in systematically examining the median age. The value can be calculated for some specific groups, however, for which the available data were insufficient to permit the calculation of the average age. These groups are foreign-born women as well as Anglo-Protestant and French-Catholic women born in Canada. These are the figures we found for women ever married aged 30-34 or 45-49 in 1961:

Population	Median age at first marriage	
	30-34 yrs.	45-49 yrs.
Immigrants	22.6 yrs.	23.8 yrs.
Protestants of English mother tongue ⁶		
Urban	21.8 "	23.8 "
Rural farm	20.9 "	24.6 "
Catholics of French mother tongue ⁶		
Urban	21.6 "	23.7 "
Rural farm	22.6 "	25.2 "

⁶Born in Canada.

Amongst women aged 45-49, immigrants have a lower median age than do the other two groups, but the opposite is true of women aged 30-34. Except for rural farm women aged 45-49, the Anglo-Protestants have a lower median age than do the French Catholics. This observation is quite different from the one formulated by Enid Charles on the basis of the 1941 Census data, in respect of women aged 45-54 at that time: early first marriages seemed favoured by French mother tongue and Roman Catholic religion.⁷ This is no longer the case today, for either factor (or perhaps for both) since, indeed, the combination of French mother tongue and Catholic religion seem to yield an age at marriage higher than for the combination of English mother tongue and Protestant religion.

Another comparison can be made in regard to the results found by Enid Charles. This author was able to measure median age at first marriage by schooling level. Unfortunately, educational level was not measured in the same way in the 1941 Census as in the 1961 Census. However, it is easy to establish the correspondence between the two types of classification, as can be judged from Table 5.13.

Table 5.13 – Median age at first marriage by level of schooling, women ever married aged 45 and over in 1941, and women aged 30-34 and 45-49 in 1961

Schooling level		Age of women in 1961		Age of women in 1941 ^a		
In 1961	In 1941	30-34 yrs.	45-49 yrs.	45-54 yrs.	55-64 yrs.	65 yrs. +
Elementary	0-4 yrs.	21.3 yrs.	23.1 yrs.	20.9 yrs.	21.7 yrs.	22.3 yrs.
	5-8 yrs.			22.7 "	23.5 "	23.6 "
Secondary	9-12 yrs.	22.1 "	24.9 "	24.0 "	24.8 "	24.5 "
University	13 yrs and over	24.1 "	26.6 "	25.6 "	26.6 "	25.7 "

^a Enid Charles, *The Changing Size of the Family in Canada*, op. cit., p. 50.

Two major facts may be discerned from these observations: in the first place, the differences between schooling levels seem first to increase, then to diminish in passing from the older to the younger generations. It would

⁷ *The Changing Size of the Family in Canada*, op. cit., p. 49.

seem that it is for women aged between 45 and 50 in 1961 that this difference is greatest.⁶ Secondly, there is a decrease in age at marriage between older women and those who were in the 45-54 age group in 1941; but the women who were between 45 and 50 years of age in 1961 married at a later age, probably because most of them reached the age of marriage during the economic crisis of the thirties. It would seem that, in all these generations, the youngest women (women aged 30-34 in 1961) married earliest.

APPLICATION

What influence can these differences in age at marriage have on fertility? There is no categorical reply to this question. Except in those cases where couples have all the children that they are physiologically capable of bearing, a delay in age at marriage does not seem to necessarily reduce fertility. We have noted however (in Table 5.4) that even in those cases where fertility is far removed from maximal fertility, a delay in age at marriage is accompanied by a lower completed fertility. On returning to the analysis we made of Table 5.4, it will be found that the fact of marrying at 25 rather than at 20 years of age, reduces fertility by about 25% to 30%, that is to say, by 5% to 6% per year of delay. The relative decrease is about the same when marriage is delayed from 25 to 30 years. This result may now be used to study women with a different educational background. It will be remembered that schooling is probably the factor which varies most in relation to age at marriage. Amongst ever-married women who were in the 45-49 age group in 1961, those who possessed a university degree married, on the average, four years later than those with only an elementary schooling. It might therefore be expected that, due to the delay in age at marriage, women who hold a university degree would be about 20 to 24% less fertile than women with only primary schooling.

There are loop-holes in this argument, however. The decrease in fertility recorded when age at marriage increases may not necessarily be due to postponement of the marriage itself. It seems likely – and even probable that other psycho-sociological phenomena enter the picture. For example, it may be that schooling is the cause, on the one hand, of an increase in age at marriage and, on the other hand, of a decrease in fertility (regardless of age at marriage). In these circumstances, it is specious to attribute to the delayed age at marriage of educated women a result that is probably solely due to schooling itself (or of attitudes characteristic of women who have had a prolonged schooling).

⁶To make a valid comparison, the two groups in the 1941 Census corresponding to elementary schooling must be regrouped. The arithmetic average of median ages of these two groups is 23.0 years for women over 65, 22.6 for women 55-64 years and 21.8 years for those between 45 and 54.

Chapter 6

VARIATIONS IN FERTILITY BY COUNTRY OF BIRTH, ETHNIC ORIGIN, MOTHER TONGUE AND RELIGION

1. COUNTRY OF BIRTH AND PERIOD OF IMMIGRATION

From the sampling of ever-married women who gave information on fertility, in the 1961 Census, it would seem that 78.7% of those who were between 15 and 65 years of age were born in Canada. The percentage distribution of those born outside of Canada is indicated in Table 6.1. About one third of the immigrant women were born in Great Britain (6.7% of the 21.3%). The five other countries from which the largest percentages came were the United States (2.3%), Italy (2.0%), Poland (1.5%), the U.S.S.R. (1.5%) and Germany (1.4%). In Table 6.1 will also be found the distribution of women from each country by residence. The concentration of immigrant women in urban centres (82.5%) is a good deal more pronounced than among women born in Canada (70.4%). This is the case for each of the countries listed in Table 6.1, except the Netherlands (64%); women from certain countries live almost solely in urban centres (Italy, Northern Ireland, Asia). On the other hand, it should be noted that women born in the U.S.A., Poland, the U.S.S.R., the Netherlands and Scandinavian countries live on a farm in greater proportions than do the women born in Canada (18% in the case of the Netherlands).

NUMBER OF LIVE-BORN CHILDREN PER 1,000 WOMEN

First of all, we shall compare the fertility of couples by drawing a distinction, for the husband and the wife, between native-born and foreign-born spouses. This differentiation points to four possible combinations of

Table 6.1 – Distribution of women ever married, aged 15-64, by country of birth, and percentage distribution of each group by type of residence, Conodo, 1961

Country of birth	Distribution by country of birth		Percentage distribution of each country by type of residence		
	Absolute number	In %	Urban	Rural non-farm	Rural farm
Canada	2,979,692	78.7	70.4	18.8	10.8
Other countries	806,781	21.3	82.5	10.1	7.4
Great Britain	253,514	6.7	84.9	11.1	4.0
U.S.A.	88,287	2.3	70.3	17.4	12.3
Italy	74,174	2.0	97.3	2.1	0.6
Poland	57,532	1.5	82.5	6.2	11.3
U.S.S.R.	55,602	1.5	79.8	7.4	12.8
Germany	53,212	1.4	84.1	9.9	6.0
Netherlands	38,352	1.0	63.0	18.7	18.3
Northern Ireland	16,473	0.4	87.4	8.3	4.3
Scandinavian countries ...	14,484	0.4	71.5	16.0	12.5
Other European countries	127,628	3.4	82.6	8.5	8.9
Asia	12,760	0.3	92.8	5.1	2.1
Other countries	14,763	0.4	89.6	8.0	2.4

birth-places and one will find, for each case, the number of live-born children per 1,000 women living with their husband, in Table 6.2 and Graph 6.1. For each of the three types of residence, the couples comprised of two native-born spouses stand out in marked contrast to the others by reason of their high fertility. The difference is most marked in the rural non-farm environment. Amongst the other three categories of couples, the differences are not very clear-cut, except in the case of women under 50 years of age who live in urban centres or in a rural non-farm environment, where the immigrant women with a foreign-born husband have a lower fertility than the other three types of couples. Based on these results, it would seem that the country of birth of the wife does not affect fertility any more than the country of birth of the husband. The only determinant element is whether or not one spouse was born outside of Canada.

Let us now examine fertility for certain countries of birth. We will only consider the country of birth of the wife, but a distinction will be made between the three types of residence. In the urban centres (Table 6.3 and Graph 6.2) the relative position of the various countries is quite different,

**Table 6.2 – Number of live-born children per 1,000 women living
with their husband, by age of woman, type of residence and
country of birth of wife and husband, Canada, 1961**
(Only women with husband present)

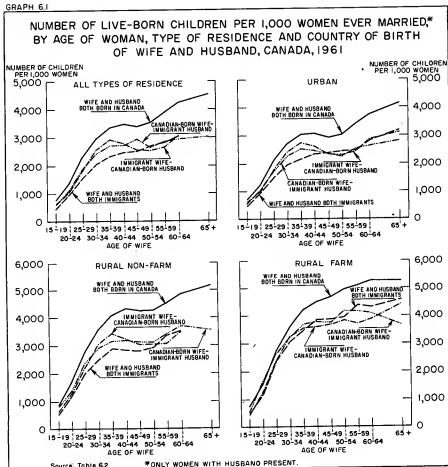
Residence and place of birth ^a	Age of woman (in years)										
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All types of residence											
Wc Hc	770	1,398	2,327	2,979	3,356	3,490	3,401	3,557	3,917	4,228	4,549
Wc Hi	607	1,125	1,887	2,444	2,707	2,731	2,943	2,644	2,866	2,950	3,005
Wi Hc	620	1,078	1,850	2,595	2,937	2,795	2,571	2,569	2,659	3,085	—
Wi Hi	456	984	1,586	2,059	2,316	2,470	2,541	2,661	2,829	3,068	—
Urban											
Wc Hc	719	1,273	2,136	2,722	3,017	3,068	2,924	3,032	3,411	3,731	4,118
Wc Hi	565	1,050	1,741	2,286	2,516	2,471	2,350	2,293	2,530	2,633	2,808
Wi Hc	632	1,014	1,753	2,433	2,773	2,625	2,343	2,303	2,415	2,869	3,106
Wi Hi	449	962	1,524	1,970	2,190	2,326	2,359	2,437	2,493	2,824	3,184
Rural non-farm											
Wc Hc	896	1,721	2,809	3,590	4,087	4,356	4,231	4,264	4,545	4,853	5,159
Wc Hi	822	1,400	2,386	2,935	3,171	3,198	3,126	3,115	3,416	3,701	3,567
Wi Hc	627	1,365	2,219	3,089	3,425	3,243	3,032	3,036	3,071	3,491	—
Wi Hi	532	1,203	2,015	2,523	2,882	2,843	2,838	2,941	3,381	3,500	—
Rural farm											
Wc Hc	731	1,570	2,740	3,614	4,218	4,518	4,684	4,964	5,093	5,275	5,266
Wc Hi	555	1,673	2,676	3,211	3,695	3,793	3,756	4,202	4,180	4,099	3,676
Wi Hc	435	1,265	2,376	3,262	3,554	3,608	3,691	3,814	3,716	3,880	4,416
Wi Hi	513	1,220	2,374	3,049	3,487	3,815	3,862	3,938	4,350	4,314	4,577

^aWc Hc: Wife and husband both native born. Wc Hi: Wife born in Canada, husband immigrant. Wi Hc: Wife immigrant, husband born in Canada. Wi Hi: Wife and husband both immigrants.

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

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GRAPH 61



depending on whether the women are under or over 40 years of age. Before this age, native-born mothers are the most fertile and are closely followed by women born in the United States and in the Netherlands. Women born in other countries have a lower fertility, but there are no major differences within this group except that the German women have a markedly lower fertility. The latter remain in the group of countries whose fertility is low, after the age of 40, which is equally true of women born in Great Britain, Northern Ireland and Scandinavia. Amongst these older women, the highest fertility is found among women born in the Netherlands and in Italy. Except the German women, they are the only group for whom there is no recorded decrease in fertility once we go from the age of 40 to 45 or 50. Canada and the United States hold an intermediary position, after age 40, alongside

Table 6.3 – Number of live-born children per 1,000 women ever married, by age and country of birth of woman, Canada, urban, 1961

Country of birth	Age of woman (in years)										
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
Canada	706	1,260	2,102	2,664	2,944	2,971	2,801	2,882	3,238	3,536	3,970
Germany	580	902	1,375	1,688	1,742	1,930	2,021	2,211	2,279	2,518	3,363
U.S.A.	541	1,092	2,091	2,565	2,938	2,718	2,660	2,726	2,889	3,324	3,661
Italy	636	907	1,410	2,052	2,493	2,416	2,129	2,129	2,210	2,492	2,850
Northern Ireland	429	990	1,607	1,930	2,475	2,375	2,250	2,279	2,362	2,536	3,106
Netherlands	402	970	1,570	2,013	2,484	2,876	3,182	3,827	3,906	4,076	4,832
Poland	457	1,136	1,930	2,519	2,788	3,264	3,777	4,240	4,186	3,979	4,276
Great Britain	368	980	1,756	2,148	2,193	2,019	2,001	2,343	2,596	3,052	4,400
Scandinavia	455	1,043	1,623	2,011	2,356	2,369	2,269	2,355	2,615	2,606	3,814
U.S.S.R.	273	945	1,626	2,023	2,079	1,949	1,974	2,193	2,593	3,470	4,496

SOURCE: DBS, *Census of Canada, 1961*, Bulletin 4, 1-8, Table H6.

GRAPH 6.2

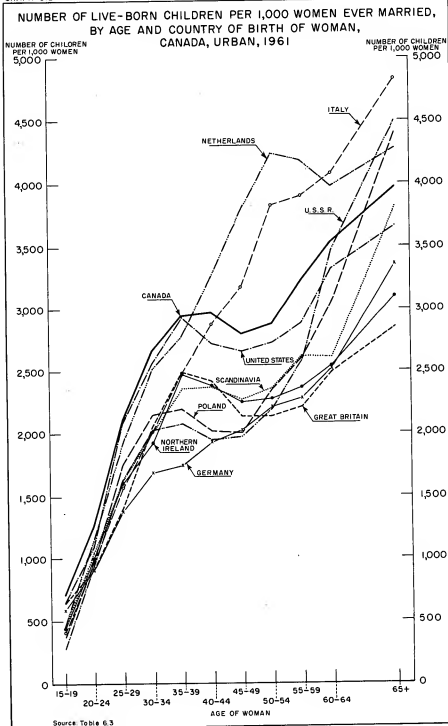


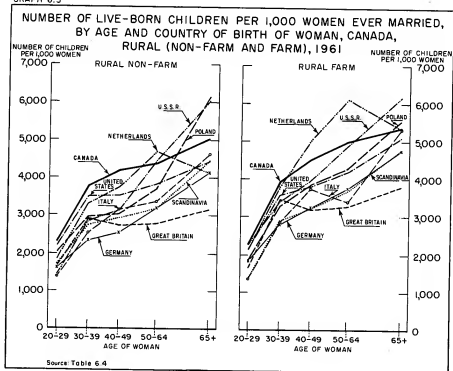
Table 6.4 - Number of live-born children per 1,000 women ever married, by age and country of birth of woman, Canada, rural (non-farm and farm), 1961

Country of birth	Age of woman (in years)									
	20-29	30-39	40-49	50-64	65+	20-29	30-39	40-49	50-64	65+
	Rural non-farm					Rural farm				
Canada	2,304	3,775	4,171	4,379	5,020	2,283	3,924	4,509	5,000	5,374
Germany	1,629	2,341	2,543	3,186	4,136	1,834	2,796	3,235	3,754	4,756
U.S.A.	2,197	3,495	3,514	3,811	4,433	2,134	3,580	3,806	4,194	5,101
Italy	1,697	2,906	2,735	2,785	3,152	1,665	3,453	3,187	3,272	3,800
Netherlands	1,388	2,534	3,131	3,364	4,619	1,351	2,841	3,735	3,396	5,312
Poland	1,848	3,297	3,739	4,684	4,130	2,131	3,802	5,014	6,117	5,318
Great Britain	2,037	2,963	3,013	3,695	6,139	1,857	3,287	3,842	4,286	5,558
Scandinavia	1,712	2,747	2,917	3,183	4,456	1,354	2,894	3,202	3,683	4,762
U.S.S.R.	1,436	2,837	3,109	4,442	6,041	2,262	3,400	3,977	4,889	6,190

SOURCE: See Table 6.3.

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GRAPH 6.3



the U.S.S.R. and Poland. But it should be pointed out that between the ages of 40 and 50, women born in these countries have a low fertility, whereas those of 65 and over have a very high fertility. On the whole, there are marked differences between the various countries; it is amongst women in the 50-55 age group that we observe the highest difference: women born in the Netherlands have borne twice as many children (4.2) as those born in Great Britain (2.1).

The rank of the countries does not greatly differ for rural areas (farm and non-farm). The Netherlands and Canada are on top of the list at virtually all ages; there are exceptions in the case of older women (65 years and over) and in this group, women from Poland and the U.S.S.R. prevail. The countries that generally rank last are Germany, Great Britain and the Scandinavian countries.¹ So the ranking remains about the same as for the

¹We ignored the women born in Northern Ireland, due to their small number, in the rural milieu.

urban centres, but it should be pointed out that Italian-born women are relatively less fertile in the rural than in the urban environment. Let us take note of another difference in relation to urban centres: in the rural environment, it is among the older women that the relative difference in fertility between countries in the extreme positions is most pronounced. This is due to the fact that rural women aged between 40 and 50, even those born in countries whose women have been the least fertile, seem not to have undergone that slump in fertility which we observed amongst urban women from all countries, at these age levels.

On the whole, the fertility of foreign-born women is found to differ in about the same way as that of women still living in the countries from which they had originated.²

Before leaving this study of fertility rates, an impression must be corrected. It was noted earlier that it is amongst the couples where both spouses are born in Canada that fertility is highest. This is the case when all women or all men born outside of Canada are grouped without a distinction being drawn with regard to country of birth. Yet, this is not the case for all countries of birth. The following are instances where fertility is higher than the fertility of native-born couples (for the urban environment only).

Age of wife	Country of birth	
	of wife	of husband
20-29 years	Canada	United States
40-49 "	Outside of Canada	Italy
" "	" "	Netherlands
50-64 "	" "	Italy
" "	" "	Netherlands
65 years and over	" "	Italy
" " " "	" "	Poland
" " " "	" "	U.S.S.R.

These findings are drawn from Table 6.5 which lists fertility, by age of wife and according to whether she is native or foreign born, for certain countries of birth of the husband. Other examples can be drawn from this table, showing that the birth of one of the spouses outside of Canada, does not always constitute a factor responsible for a drop of fertility. For

² Jean-Noël Biraben, Yves Péron and Alfred Nizard, "La situation démographique de l'Europe occidentale", in *Population*, juin-juillet 1964, p. 455.

Table 6.5 – Number of live-born children per 1,000 women living with their husband:
comparision of Canadian-born (C) and immigrant wives (I) for selected countries of
birth of husband, Canada, urban, 1961

Country of birth of husband	Age of woman (in years)									
	20-29		30-39		40-49		50-64		65+	
	C	I	C	I	C	I	C	I	C	I
Canada	1,776	1,438	2,867	2,650	3,004	2,505	3,303	2,479	4,118	3,106
Germany	1,315	1,175	2,220	1,764	2,428	2,027	2,693	2,352	1,870	3,345
U.S.A.	1,857	1,773	2,751	2,732	2,798	2,607	3,011	2,865	3,693	3,589
Italy	1,371	1,224	2,377	2,014	2,286	2,190	2,149	2,210	2,451	2,667
Northern Ireland	1,322	1,390	2,477	2,074	2,264	2,452	1,957	2,337	2,286	2,864
Netherlands	1,303	1,312	2,277	2,223	2,648	3,078	3,272	3,954	4,000	4,772
Poland	1,324	1,672	2,155	2,664	2,616	3,648	2,426	4,278	2,186	3,780
Great Britain	1,764	1,535	2,369	2,089	2,250	1,988	2,610	2,507	4,000	4,165
Scandinavia	1,320	1,439	2,437	2,095	2,357	2,382	2,324	2,449	3,747	3,595
U.S.S.R.	1,530	1,526	2,290	2,025	2,345	1,905	2,761	2,606	3,962	4,179

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

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example, in the following cases, foreign-born husbands have a higher fertility when their wife is also foreign born³ rather than being born in Canada.

<u>Country of birth of husband</u>	<u>Age of wife</u>
Northern Ireland	All, except 30-39 years
Netherlands	All ages
Poland and U.S.S.R.	65 years and over
Scandinavian countries	20-29, 40-49, and 50-64 years

On the other hand, certain immigrant women are more fertile when their husbands are born in certain countries.

<u>Country of birth of husband</u>	<u>Age of wife</u>
Germany	65 years and over
U.S.A.	All ages
Italy	30 years and over
Netherlands	All
Poland and U.S.S.R.	20-29 years and 50 years and over
Scandinavian countries	65 years and over

In the case of the Netherlands, the excess fertility is considerable, regardless of whether husband or wife are born there. The same is true of Italy, when the wife is over 40 years.

DISTRIBUTION BY NUMBER OF CHILDREN

Table 6.6 gives the percentage distribution of urban women ever married by the number of children they have borne and country of birth, for four specific age groups. Generally speaking, a greater proportion of native born had a relatively higher number of children than did foreign-born women. Let us look, for example, at the women in the 35-39 age group: 53.5% of the native born had three children or more, whereas this was true of only 39.8% of the foreign-born women. Amongst the latter, however, there are quite marked differences: the women born in the U.S.A. and in the Netherlands have a distribution which closely resembles that of native-born women. On the other hand, the proportions of women born in certain countries who bore three or more children are very low — the percentages are: Germany, 24.3%; the U.S.S.R., 24.3%; "Other European countries", 32.7%. It should be particularly pointed out that 18.7% of the women born in Germany had not had any children.

³Probably in the same country as themselves, for a great number of them.

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Among women in the 45-49 age group, native-born women show a greater concentration than others in categories corresponding to a higher fertility: 17.7% of the women born in Canada have had five or more children as compared to 10.5% of the foreign-born women who have had the same number of children. However, contrary to what is observed in younger age groups, native-born women are greatly surpassed by the Netherlands (32.5%). The percentage for Italy is also higher than for Canada (21.0%). Finally, as in the case of younger women, certain countries stand out by reason of a characteristically low percentage: Poland, U.S.S.R. and Germany fall into this particular category. These countries are also remarkable by reason of their high percentages of childless women.

Table 6.6 – Percentoge distribution of women ever married by number of live-born children and by country of birth of woman, for selected age groups, Canada, urban, 1961

Age and country of birth of woman	Number of children								
	Total	0	1	2	3	4	5	6	7+
20-24 years									
Canada	100.0	28.2	34.8	24.3	9.3	2.6	0.5	0.2	0.1
Other countries	100.0	33.8	41.8	18.9	4.6	0.6	0.1	0.1	0.1
Germany	100.0	37.6	40.3	17.2	4.3	0.6	—	—	—
U.S.A.	100.0	32.8	35.7	23.2	6.5	1.5	0.3	—	—
Great Britain	100.0	40.2	36.2	17.9	4.5	1.1	0.1	—	—
Northern Ireland	100.0	36.8	38.6	15.1	7.5	2.0	—	—	—
Italy	100.0	29.4	49.2	17.3	3.3	0.6	0.1	—	0.1
Netherlands	100.0	29.8	37.9	22.5	8.9	0.7	—	0.2	—
Poland	100.0	33.2	39.5	23.4	3.9	—	—	—	—
Scandinavia	100.0	35.1	36.7	19.7	5.9	2.6	—	—	—
U.S.S.R.	100.0	39.9	32.2	21.3	6.6	—	—	—	—
Other European countries	100.0	33.8	44.4	18.5	2.9	0.1	0.1	0.1	0.1
Asia	100.0	25.3	35.4	29.6	8.5	0.8	—	0.4	—
Other countries	100.0	35.0	40.8	17.1	6.7	—	—	—	0.4
35-39 years									
Canada	100.0	9.9	12.6	24.0	21.7	14.0	7.8	4.2	5.8
Other countries	100.0	10.9	18.0	31.3	20.9	10.3	4.7	2.1	1.8
Germany	100.0	18.7	26.6	30.4	14.6	6.3	2.7	0.5	0.2
U.S.A.	100.0	8.6	11.0	25.0	24.1	14.2	8.1	4.6	4.4
Great Britain	100.0	9.2	16.5	31.1	21.6	11.6	5.2	2.7	2.1
Northern Ireland	100.0	9.4	16.1	32.0	21.1	11.9	5.0	1.7	2.8
Italy	100.0	6.0	16.8	34.3	23.5	11.8	4.4	1.5	1.7
Netherlands	100.0	9.8	12.8	25.1	23.0	13.4	7.8	4.1	4.0
Poland	100.0	10.7	17.4	36.2	21.9	8.6	3.3	1.0	0.9
Scandinavia	100.0	10.7	18.3	30.8	20.1	10.8	5.5	2.4	1.4
U.S.S.R.	100.0	12.5	19.6	35.7	19.8	7.6	2.8	1.6	0.4
Other European countries	100.0	14.5	22.8	30.0	18.8	7.7	3.6	1.5	1.1
Asia	100.0	8.0	10.3	33.2	22.2	14.9	7.4	2.2	1.8
Other countries	100.0	11.2	14.3	27.4	22.4	12.1	5.0	2.8	4.8

COUNTRY OF BIRTH AND PERIOD OF IMMIGRATION

Table 6.6 – Percentage distribution of women ever married by number of live-born children and by country of birth of woman, for selected age groups, Canada, urban, 1961 (Concluded)

Age and country of birth of woman	Number of children								
	Total	0	1	2	3	4	5	6	7+
45-49 years									
Canada	100.0	14.7	16.2	23.8	17.0	10.6	6.1	4.0	7.6
Other countries	100.0	13.9	20.2	28.5	17.5	9.4	4.8	2.5	3.2
U.S.A.	100.0	17.5	25.0	26.9	15.0	8.4	3.7	1.0	2.5
Germany	100.0	12.4	17.5	26.4	18.6	10.7	5.5	3.5	5.4
Italy	100.0	14.5	22.3	30.2	17.3	8.3	3.7	1.7	2.0
Northern Ireland	100.0	15.2	17.6	32.8	17.6	4.9	5.8	3.7	2.4
Netherlands	100.0	6.4	9.7	25.9	21.2	15.8	8.7	6.3	6.0
Poland	100.0	7.0	10.1	20.0	16.9	13.5	11.7	6.0	14.8
Great Britain	100.0	15.7	21.3	32.4	18.1	7.8	2.5	0.7	1.5
Scandinavia	100.0	13.2	21.5	24.1	21.9	9.4	7.1	1.1	1.7
U.S.S.R.	100.0	17.8	24.9	27.3	15.6	7.9	3.3	1.8	1.4
Other European countries	100.0	16.3	22.7	29.5	15.5	7.8	4.5	1.6	2.1
Asia	100.0	5.1	12.5	23.3	22.7	17.0	9.1	4.0	6.3
Other countries	100.0	18.4	17.4	23.7	16.2	9.0	4.7	4.7	5.9
65 years and over									
Canada	100.0	15.1	12.6	15.4	12.9	10.0	7.5	5.9	20.6
Other countries	100.0	11.5	14.3	19.1	16.6	12.3	8.3	5.8	12.1
U.S.A.	100.0	9.4	17.1	21.8	15.7	11.2	5.6	4.4	14.8
Germany	100.0	14.2	12.7	17.1	14.2	11.0	8.7	6.0	16.1
Italy	100.0	12.8	16.7	21.6	17.9	12.1	7.2	4.6	7.1
Northern Ireland	100.0	14.5	12.9	18.1	18.3	12.4	8.2	6.5	9.2
Netherlands	100.0	4.5	6.3	12.2	12.9	14.1	14.0	10.0	26.0
Poland	100.0	8.9	10.4	12.0	12.7	16.4	6.0	8.9	24.7
Great Britain	100.0	5.1	7.2	15.1	14.6	15.0	13.4	9.6	20.0
Scandinavia	100.0	9.2	14.2	15.8	14.5	13.0	8.4	7.4	17.5
U.S.S.R.	100.0	6.4	8.0	14.4	15.4	14.4	10.7	8.4	22.3
Other European countries	100.0	10.0	13.0	17.2	15.6	11.5	8.6	6.7	17.4
Asia	100.0	7.0	10.9	9.5	14.4	14.4	10.9	8.7	24.2
Other countries	100.0	12.7	17.1	20.8	14.8	11.4	6.4	7.1	9.7

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

Amongst women over 65 years of age, the immigrants are characterized by low percentages of childless women: 11.5% as compared to 15.1% for native-born women. However, the latter have remarkably high percentages of women who have borne seven and more children: 20.6% as compared to 12.1% for immigrant women. The differences are similar in the case of women having borne five children or more. Furthermore, we also find here countries whose percentages of women having borne five or more children are higher than in Canada (34.0%): Italy (50.0%), Poland (43.0%), U.S.S.R.

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(41.4%), and the Netherlands (39.6%). In the case of Poland and the U.S.S.R., this is an entirely different situation to the one prevalent amongst younger women from the same countries, very few of the latter having borne a great number of children. We also draw attention to the very low percentage of women over 65 years of age, born in Great Britain, in Northern Ireland and Germany, who have had five or more children. One final observation is worthy of mention: the very low percentage of women from certain countries who have remained childless: Italy (4.5%), Poland (5.1%), U.S.S.R. (6.4%), Asia (7.0%). These percentages are lower than what was observed amongst the younger generations.

Table 6.7 – Parity-progression ratios by country of birth of woman, Canada, urban, for women ever married, aged 35-39 and 65 and over, 1961

Age group and country of birth	Parity-progression ratios						
	0 to 1 child	1 to 2 children	2 to 3 children	3 to 4 children	4 to 5 children	5 to 6 children	6 to 7 children
35-39 years							
Canada .....	.901	.860	.690	.594	.560	.562	.580
Other countries .....	.891	.798	.560	.475	.455	.453	.462
U.S.A. ....	.813	.673	.444	.399	.351	.206	
Germany .....	.914	.880	.689	.565	.546	.526	
Italy .....	.908	.818	.581	.500	.463	.480	
Northern Ireland ....	.906	.822	.570	.504	.444	.474	
Netherlands .....	.940	.821	.556	.452	.392	.421	
Poland .....	.902	.858	.676	.560	.543	.509	
Great Britain .....	.893	.805	.497	.387	.377	.365	
Scandinavia .....	.893	.795	.566	.500	.463	.409	
U.S.S.R. ....	.875	.776	.474	.385	.387	.417	
Other European countries	.855	.733	.522	.425	.446	.419	
Asia .....	.920	.888	.594	.542	.433	.351	
Other countries .....	.888	.839	.632	.524	.510	.603	
65 years and over							
Canada .....	.849	.852	.787	.773	.773	.779	.777
Other countries .....	.885	.838	.743	.699	.681	.683	.676
U.S.A. ....	.906	.811	.703	.696	.689	.774	
Germany .....	.858	.852	.766	.746	.737	.718	
Italy .....	.872	.808	.694	.634	.610	.619	
Northern Ireland ....	.856	.849	.751	.665	.658	.657	
Netherlands .....	.955	.934	.863	.832	.780	.720	
Poland .....	.911	.886	.851	.815	.707	.848	
Great Britain .....	.949	.924	.828	.799	.741	.688	
Scandinavia .....	.908	.844	.794	.762	.719	.748	
U.S.S.R. ....	.936	.915	.832	.784	.742	.742	
Other European countries	.900	.856	.777	.739	.740	.737	
Asia .....	.930	.883	.884	.802	.753	.751	
Other countries .....	.873	.804	.704	.700	.671	.724	

SOURCE: Table 6.6.

PARITY-PROGRESSION RATIOS

We will limit ourselves here to an examination of urban women in only two age groups, namely, 35-39 years of age and 65 years and over. In examining Table 6.7 and Graph 6.4, one can easily ascertain quite important differences between these two groups of generations. Except for parity-progression ratios from 0 to 1, the figures are much lower for women aged 35-39 than for those aged 65 and over. The following are the extreme figures for parity-progression ratios of different birth orders:

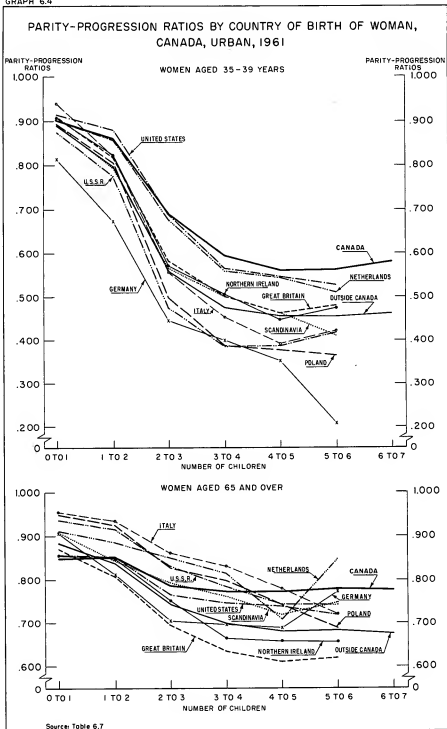
Extreme values of parity-progression ratios

<u>Birth order</u>	<u>35-39 years</u>	<u>65 years and over</u>
0 to 1 child	0.813 - 0.940	0.849 - 0.955
1 to 2 children	0.673 - 0.888	0.804 - 0.934
2 to 3 "	0.444 - 0.690	0.694 - 0.863
3 to 4 "	0.385 - 0.594	0.634 - 0.832
4 to 5 "	0.351 - 0.560	0.610 - 0.780
5 to 6 "	0.206 - 0.603	0.619 - 0.848

It will be noted that the difference between the countries at each end of the continuum increases with birth order, particularly for women in the 35-39 age group, and the decrease of the ratios with birth order is much quicker in the case of younger women, particularly in the transition from two to three children. For all foreign-born women, aged 35-39, the parity-progression ratio changes from 0.891 (for 0 to 1 child) to 0.453 (for 5 to 6 children) whereas it changes from 0.885 to 0.683 for those aged 65 and over.

If we examine the relative position of the curves in Graph 6.4, we find rather striking the changes that have occurred between generations. Amongst the older women, the ones born in Italy, Poland, the U.S.S.R. and the Netherlands are those with the highest parity-progression ratios. Women born in Canada, Scandinavia and in the U.S.A. rank next and are followed by those born in Germany, Northern Ireland and in Great Britain. The parity-progression ratios of women born in Canada are at the lowest level of all countries for the passage from 0 to 1 child (0.849) and rank second for the passage from 5 to 6 children (0.779). The behaviour of women born in the U.S.A. is about the same. For women aged 35-39, the relative positions are quite different: women born in Canada, the U.S.A. and the Netherlands occupy the highest levels; they are followed by women from Great Britain, Northern Ireland and Italy, and finally by those from Poland, the U.S.S.R. and Germany.

GRAPH 6.4



FERTILITY BY PERIOD OF IMMIGRATION

The behaviour of immigrant women differs greatly depending on the period during which they settled in Canada. Moreover, their behaviour equally differs in relation to their age in 1961. Thus is revealed another element which underlies these two factors, namely, their age at the time they immigrated to Canada. This circumstance takes on great importance and, in certain instances, gives a particular shape to some fertility curves. Before examining the fertility rates, let us have a look at the relative importance of ever-married women aged from 15 to 65 in 1961, by period of immigration.

<u>Period of immigration</u>	<u>Number of ever-married women aged from 15 to 65 years in 1961⁴</u>
Before 1921	153,751
1921 to 1930	146,509
1931 to 1940	38,767
1941 to 1945	14,538
1946 to 1950	108,806
1951 to 1955	169,064
1956 to 1961	178,184

Let us now turn to the fertility of these women, before 1961, according to their age. The figures in Table 6.8 and Graph 6.5 are for urban dwellers. The curves in Graph 6.5 present a surprising but explicable *chassé-croisé*. We shall use as a reference point the curves corresponding to the customary pattern previously observed among urban women, that is among those which correspond to women who immigrated before 1940. The number of children born to these women reaches a first maximum around the age of 40; it is lower for women between 40 and 55 years, then increases for older women, particularly for those who immigrated before 1921. Most of the latter bore their children in Canada. The oldest (65 years and over) may have borne their first children before immigrating, but the younger ones bore theirs in Canada, either during or after the economic crisis. The women who came to Canada between 1921 and 1930 or between 1931 and 1940 did not behave very differently from their predecessors except in the case of the oldest (60 years and over), whose fertility was lower. This may be due to the fact that a greater proportion among them bore their children in their country of origin.

The women who immigrated during the war (1941-1945) followed a very distinctive behaviour pattern: the youngest (15 to 40 years) were the most fertile; the oldest (50 years and over) were the least fertile. The explana-

⁴According to the sample of women questioned about fertility.

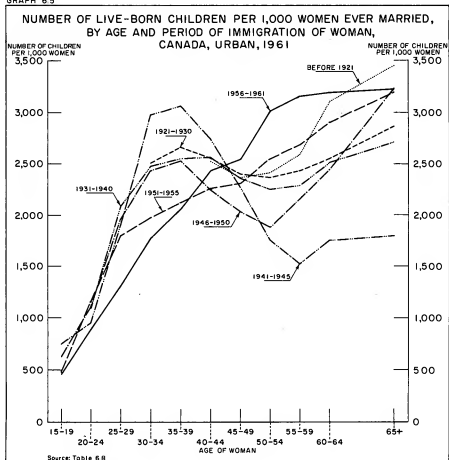
Table 6.8 – Number of live-born children per 1,000 women ever married, by
age and period of immigration of woman,
Canada, urban, 1961

Period of immigration	Age of woman (in years)										
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
Before 1921	—	—	—	—	—	2,521	2,366	2,415	2,589	3,104	3,453
1921-1930	—	—	—	2,503	2,660	2,559	2,400	2,371	2,437	2,550	2,862
1931-1940	—	1,087	2,088	2,476	2,547	2,562	2,363	2,247	2,286	2,511	2,704
1941-1945	740	949	1,900	2,975	3,058	2,741	2,276	1,753	1,520	1,750	1,797
1946-1950	626	1,096	1,957	2,438	2,531	2,246	2,033	1,878	2,161	2,444	3,229
1951-1955	473	1,149	1,798	1,974	2,123	2,261	2,312	2,556	2,682	2,903	3,191
1956-1961	457	889	1,308	1,773	2,055	2,439	2,544	3,016	3,156	3,186	3,226

SOURCE: DBS, *Census of Canada, 1961*, Bulletin 4.1-8, Table H7.

COUNTRY OF BIRTH AND PERIOD OF IMMIGRATION

GRAPH 6.5



tion is simple, as far as we are concerned: the youngest bore all their children in this country, after the war, and contributed to the marked rise in fertility which took place at that time in Canada, whereas the older women bore their children before they came to Canada and a good number among them during the economic crisis. The women who immigrated during the years 1946 to 1950 were subject to the same influences, but apparently to a lesser degree.

In the case of the more recently arrived immigrants (1951-1955 and 1956-1961) the number of live-born children per woman increases constantly with age. The two curves cross one another: the immigrants from 1956 to 1961 had a higher fertility after the age of 40, lower before that age. The phenomenon may be explained as follows: amongst women under 40, those who came between 1951 and 1955 bore almost all their children in Canada,

Table 6.9' - Number of live-born children per 1,000 women ever married, by age and period of immigration of woman, Canada, rural (non-farm and farm), 1961

Period of immigration	Age of woman (in years)									
	20-29	30-39	40-49	50-64	65+	20-29	30-39	40-49	50-64	65+
	Rural non-farm					Rural farm				
Before 1921	—	—	3,307	3,724	4,373	—	—	3,855	4,413	5,206
1921-1930	—	3,360	3,241	3,077	3,218	—	3,473	3,968	3,881	4,037
1931-1940	2,229	3,291	3,310	2,553	2,641	2,282	3,503	3,593	3,510	3,430
1941-1945	2,215	3,724	3,118	1,985	1,538	—	4,216	3,241	3,552	5,400
1946-1950	1,933	3,248	2,597	2,310	2,648	2,161	3,414	3,345	3,828	3,954
1951-1955	1,992	2,659	2,801	3,177	3,425	2,191	3,279	3,843	4,747	4,569
1956-1961	1,481	2,346	2,678	2,653	2,882	1,481	2,401	3,180	3,812	3,034

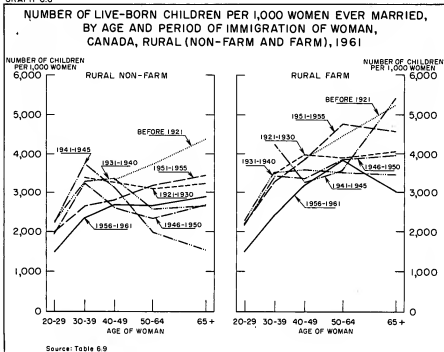
SOURCE: DBS, *Census of Canada, 1961*, Bulletin 4.1-8, Table H7.

whereas an appreciable portion among those who did not come until after 1955 began bearing their children prior to their immigration. This explanation does not hold for the older women, since most in this group bore their children in their country of origin. In this case, it must be the composition, by country of origin, of these two groups of immigrants which explains the difference in their fertility. We note, for example, that the immigrants of recent date were comprised of more Italians and fewer Germans than in the preceding period; but there were also fewer Dutch amongst their number so that this explanation is not very convincing.

When fertility curves for successive groups of immigrants are compared, from the 1941-1945 group to the most recent, one observes an extraordinary kind of equilibrium, the pivotal point being between 40 and 50 years. As the period of immigration gets closer to 1961, the fertility of younger women decreases and that of the older group increases.

The same pattern is noted amongst women living in a rural non-farm environment in 1961, whose number of live-born children will be found in Table 6.6 and Graph 6.9. The curves for women living on a farm have a form

GRAPH 6.6



and a relative position that are also similar to those observed for urban women. There are, however, some exceptional points that are explained by the fact that they represent only a small number of women.

One factor stands out in this study on fertility by age and period of immigration of the woman, one which seems to play a dominant role: namely, the country in which the woman was living at the time she bore her children. It would seem that the fact of living in Canada is a decisive factor of high fertility.

2. ETHNIC ORIGIN

Ethnic origin, as defined by Canadian censuses, and as ambiguous as it may be in certain cases,⁵ nonetheless permits the differentiation between segments of Canadian society whose attitudes and values affect fertility. This will be readily appreciated as the study progresses. To a certain extent, ethnic origin cuts across country of birth, but this is not always so. It is obviously the case for Indians and Eskimos; it is also the case for a great many people who, despite their being born in Canada, nonetheless retain close ties with the culture of groups that have originated in one or the other country. The most outstanding example of this is, of course, the case of persons of French ethnic origin. However, the fertility of the French ethnic group is almost similar to the fertility of the group whose mother tongue is French and which we will have occasion to examine in the next part of this chapter. There is also overlapping between the British ethnic group,⁶ persons born in Great Britain, and the English linguistic group although these three groups are far from being identical. There is another analogous case: there is a partial correspondence between persons of Irish ethnic origin and those born in Ireland. As to persons of Jewish origin, the identification is mainly with persons of Jewish faith. To conclude, the Indians and Eskimos are about the only group that can be reached only by ethnic origin although it may have been possible to identify them by mother tongue.

⁵In Canadian censuses, the question about ethnic origin (or cultural origin) was intended to pinpoint the cultural group to which belonged the paternal ancestor who immigrated to America. A different criterion is used for Indians and Eskimos. In certain cases, the ethnic origin of an individual does not mean a great deal as regards that individual's self-identification with a particular cultural group.

⁶British ethnic group does not here include the Irish.

All possible ethnic groups have not been included in the study. As far as European ethnic origins are concerned, only British, French and Irish ethnic groups will be differentiated. Certain other ethnic groups corresponding to north-western Europeans have been grouped together (German, Austrian, Finnish, Scandinavian, Czech and Slovak). The Asiatics have also been re-grouped. Finally, Indians, Eskimos and Jews will be studied separately. In Table 6.10, the number of women ever married in the 15 to 65 age group has been given for each of these ethnic groups, as well as the percentage distribution by type of residence. Almost all the Jewesses live in urban centres; the Asiatics are also heavily concentrated in these areas; on the other hand, a large proportion of the women who originated in North-western Europe live on a farm. Finally, the Indian and Eskimo women live mainly in a rural non-farm environment.

Table 6.10 – Distribution of women ever married, aged 15-64, for selected ethnic groups, and percentage distribution by type of residence, Canada, 1961

Ethnic origin	Distribution by ethnic origin		Percentage distribution of each origin by type of residence		
	Absolute number	In %	Urban	Rural non-farm	Rural farm
British ^a	1,357,504	35.8	73.9	17.8	8.3
French	1,037,025	27.3	72.6	17.5	9.9
Irish	364,988	9.6	71.6	17.8	10.6
Jewish	41,395	1.1	99.7	0.3	0.0
Other north-western European ^b	390,613	10.3	66.9	17.0	16.1
Asiatic	21,811	0.6	90.6	6.7	2.7
Eskimo	1,779	—	9.4	90.6	0.0
Indian	31,861	0.8	15.2	78.0	6.8

^a Except Irish origin.

^b German, Austrian, Finnish, Scandinavian, Czech and Slovak.

SOURCE: DBS, *Census of Canada, 1961*, Bulletin 4.1-8, Table H4.

Table 6.11 gives the number of live-born children per 1,000 ever-married women, according to their age in 1961, for the ethnic groups mentioned above. In addition to the rates for all types of residence as a whole, one will find rates for four particular types of residence: urban centres as a whole, cities of 100,000 inhabitants or more, rural non-farm and rural farm. The information is represented in Graph 6.7, except for cities of 100,000 inhabitants or more, where fertility does not greatly differ from that of the urban population as a whole, except for Indians. The latter are much less fertile in the cities than in the smaller urban centres.

Table 6.11 - Number of live-born children per 1,000 women
ever married, by age and ethnic origin of
woman, Canada, by type of residence, 1961

Type of residence and ethnic origin	Age of woman (in years)										
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All types of residence											
British	766	1,347	2,159	2,675	2,847	2,826	2,624	2,519	2,626	2,817	3,130
French	727	1,371	2,371	3,190	3,892	4,296	4,278	4,524	4,979	5,483	6,242
Irish	780	1,438	2,256	2,805	3,052	3,043	2,823	2,704	2,732	3,034	3,391
Jewish	140	814	1,824	2,315	2,275	2,134	1,960	1,912	2,080	2,379	3,547
North-western European ^a	675	1,262	2,024	2,492	2,717	2,884	2,805	2,836	3,180	3,507	4,250
Asiatic.....	593	1,227	1,805	2,264	2,572	2,821	3,159	3,200	3,673	4,157	4,516
Eskimo.....	843	1,959	3,430	4,576	6,000	6,225	6,525	5,862	6,087	6,736	5,714
Indian.....	1,262	2,267	3,786	5,106	6,259	6,761	6,702	6,131	6,013	6,009	5,804
Urban											
British	714	1,232	1,996	2,505	2,649	2,575	2,364	2,252	2,368	2,556	2,901
French	710	1,270	2,177	2,850	3,406	3,640	3,558	3,782	4,269	4,841	5,757
Irish	721	1,305	2,097	2,611	2,818	2,799	2,528	2,420	2,492	2,757	3,148
Jewish	143	808	1,820	2,316	2,274	2,129	1,954	1,916	2,079	2,374	3,529
North-western European ^a	631	1,164	1,839	2,257	2,379	2,505	2,396	2,435	2,761	3,189	3,982
Asiatic.....	577	1,237	1,774	2,218	2,494	2,696	3,116	3,076	3,493	4,112	4,542
Indian.....	1,256	1,880	2,828	3,825	4,891	4,968	5,400	5,157	4,730	6,409	5,753
Cities of 100,000+											
British	661	1,120	1,845	2,341	2,484	2,388	2,161	2,056	2,155	2,359	2,730
French	714	1,200	2,032	2,613	3,093	3,280	3,116	3,319	3,829	4,254	5,276
Irish	676	1,227	1,750	2,447	2,649	2,587	2,289	2,185	2,281	2,496	2,976
Jewish	154	805	1,821	2,305	2,255	2,107	1,946	1,903	2,087	2,380	3,526
North-western European ^a	561	1,090	1,677	2,093	2,198	2,304	2,165	2,258	2,557	2,923	3,687
Asiatic.....	631	1,178	1,751	2,199	2,364	2,607	3,027	2,986	3,418	4,072	4,420
Indian.....	867	1,768	2,585	3,379	3,550	4,349	4,465	4,343	3,461	5,526	4,756

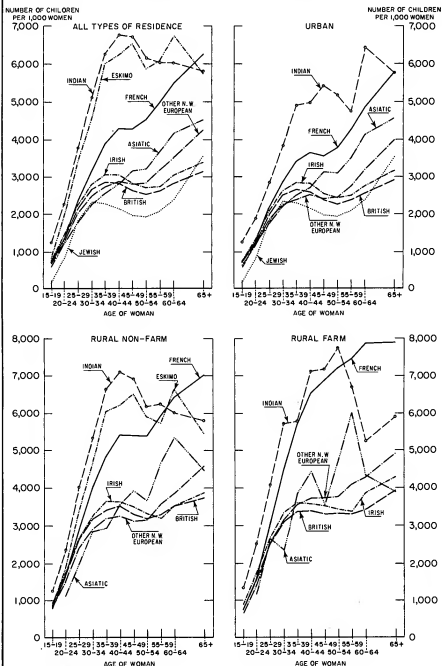
Rural non-farm												
British.....	905	1,660	2,638	3,188	3,414	3,518	3,294	3,182	3,284	3,533	3,741	
French.....	783	1,692	2,897	4,016	4,824	5,408	5,399	5,384	5,934	6,434	7,006	
Irish	911	1,767	2,663	3,268	3,647	3,636	3,504	3,312	3,199	3,533	3,872	
North-western European ^a	808	1,523	2,410	2,906	3,190	3,254	3,121	3,145	3,588	3,861	4,591	
Asiatic	—	1,107	2,000	2,854	2,929	3,576	3,929	3,667	4,667	5,333	4,459	
Eskimo	839	1,887	3,394	4,669	6,045	6,208	6,506	5,900	5,707	6,637	5,440	
Indian	1,261	2,360	4,019	5,326	6,641	7,095	6,914	6,166	6,231	6,004	5,805	
Rural farm												
British	724	1,560	2,520	3,096	3,365	3,393	3,307	3,317	3,301	3,426	3,933	
French	724	1,581	3,092	4,501	5,695	6,532	6,873	7,212	7,481	7,874	7,891	
Irish	877	1,729	2,700	3,342	3,605	3,574	3,524	3,425	3,363	3,877	4,295	
North-western European ^a	657	1,427	2,529	3,152	3,568	3,713	3,723	3,767	4,099	4,280	4,910	
Asiatic	—	1,167	2,667	2,357	3,850	4,417	3,556	4,722	6,000	4,333	3,900	
Indian	1,333	2,522	4,081	5,712	5,787	7,113	7,174	7,735	6,684	5,238	5,897	

^aGerman, Austrian, Finnish, Scandinavian, Czech and Slovak.

SOURCE: DBS, *Census of Canada, 1961*, Bulletin 4.1-8, Table H4.

GRAPH 6.7

NUMBER OF LIVE-BORN CHILDREN PER 1,000 WOMEN EVER MARRIED,
BY AGE AND ETHNIC ORIGIN OF WOMAN, CANADA,
BY TYPE OF RESIDENCE, 1961



Source: Table 6.11

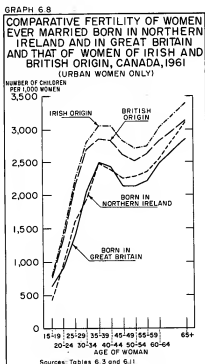
At all ages, Indian and Eskimo women are markedly more fertile than the women of any other group, and the former tend to slightly surpass the latter. At the age of 50, these women have borne, on the average, 6.5 children. The slightly lower rates recorded for Indian women over the age of 50 are no doubt due to a fault of memory. The rank of ethnic groups, in so far as fertility is concerned, is the same, regardless of the type of residence. After the Indian and Eskimo, come the French women amongst whom the oldest (aged 65 and over) are as fertile as the first named (6.2 children for all types of residence, taken as a whole), 5.8 for the urban centres (this is slightly lower than for Indian women), 7 in the rural non-farm and 7.9 in the rural farm environment. This last figure probably approximates physiological fertility, but it should equally be noted that French women living on farms who were under 60 years of age in 1961 did not have the same fertility as their predecessors. Besides, this observation applies equally to all groups, except the Indian and Eskimo.

In decreasing order of fertility, the Asiatics follow the French, at least after the age of 45. Before 40 years of age, the Asiatics have a relatively low fertility rate and scarcely surpass the Jewesses. The latter stand out by reason of the small number of children to whom they give birth; those aged between 45 and 60 in 1961 scarcely bore a sufficient number of children to ensure the replacement of their own generation and apparently their immediate descendants will just bear some 2.3 children necessary to meet this objective. Between the Asiatics and the Jewesses, still respecting the decreasing order of fertility, are found the other ethnic groups from countries corresponding to "Other north-western European", the Irish and the British. It should be noted, however, that Irish women are more fertile than north-western European women, under 45 or 55, depending on type of residence. The same is pretty well true of British women, except in the farm environment.

With the exception of Indian and Eskimo women, all ethnic groups have been affected by the secular decrease in fertility and in all types of residence. This can be verified by looking at that part of the curves corresponding to persons over 50 years of age. But it is equally true that among all groups, except perhaps among the Asiatics, this drop was broken with women who were about 50 years of age in 1961: women who were a little under 50 years of age in 1961 bore more children than did those who were their elders by a few years. This phenomenon prevails only slightly amongst women of French origin, but it is quite obvious for British, Irish, north European and Jewish women.

What should finally be pointed out are the very great differences in fertility among the ethnic groups: for all types of residence as a whole and for ages close to 50 years, the women of French origin are about twice as fertile as women of Jewish origin, while the Indian and Eskimo women are more than three times as fertile. The relative difference is less pronounced in urban centres and in the rural non-farm environment but, on the farms, women of French origin between 45 and 65 years of age have borne a number of children that is not much less than the number borne by Indian and Es-

kimo women and which is just about double the number borne by Irish women on farms and even more than the number borne by British women.



It is interesting to compare the fertility of women born in Great Britain and Northern Ireland, on the one hand, with the fertility of women of British and Irish ethnic origin. This comparison is illustrated in Graph 6.8, for urban women. In both cases, the women of the ethnic origin concerned are markedly more fertile than the women born in the corresponding countries, the difference being slightly more pronounced in the case of the Irish than the British women. However, it should be noted that, for countries of birth, only women born in Northern Ireland were taken into consideration.

DISTRIBUTION BY NUMBER OF CHILDREN (INDIAN AND ESKIMO WOMEN)

These two ethnic groups are characterized by high fertility. We will examine here, for women from 40 to 50 years of age living in the rural non-farm environment, the distribution by number of children, and the parity-progression ratios.⁷ We have chosen this age group because, apparently, it is

⁷These aspects of fertility will be studied later, for urban women only, and for the following cases: women of English or French mother tongue, whose fertility is very similar to that of the corresponding ethnic groups; women of Jewish religion whose fertility is almost identical to that of women of Jewish origin.

the one that most closely corresponds to the two following requirements: period of fertility just about completed and accuracy of memory as to the number of children ever born. According to Table 6.12, it would seem that a relatively high proportion of Eskimo and Indian women remained sterile (7%). But very few women had merely one child. The parity-progression ratios are high up to the sixth child, and rapidly decline thereafter. However, these ratios are no higher than those we will subsequently find with regard to French-speaking women living on a farm and aged over 65.

Table 6.12 – Percentage distribution of Eskimo and Indian women ever married, aged 40-49, by number of live-born children and parity-progression ratios, Canada, rural non-farm, 1961

Percentage distribution			Parity-progression ratios		
Number of children	%		Birth order	Ratio	
	Eskimo	Indian		Eskimo	Indian
0	7.1	7.0	From 0 to 1 child	0.93	0.93
1	1.9	2.9	“ 1 to 2 children	0.98	0.97
2	5.5	3.9	“ 2 to 3 “	0.94	0.96
3	6.5	5.3	“ 3 to 4 “	0.92	0.94
4	10.3	6.0	“ 4 to 5 “	0.87	0.93
5	7.4	8.3	“ 5 to 6 “	0.89	0.89
6	13.5	12.6	“ 6 to 7 “	0.78	0.81
7 and over	47.7	54.0			

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

FERTILITY OF WOMEN OF ALL MARITAL STATUS

We know the proportion of women who have previously been married for specific ethnic groups, by five-year age groups up to 25 years, by ten-year age groups from age 25 to age 65 and for women over 65.⁸ This permits us to estimate the number of live-born children per woman of all marital status, except that children born to women who have never married are omitted. This results in an under-evaluation, probably rather low.⁹ The results of this estimate will be found in Table 6.13 and Graph 6.9. Because of the information available on marital status, it was necessary to group the Irish with the British women, the Eskimo with the Indian women. In the relative

⁸See Table J.2, in appendix.

⁹It should be noted that the illegitimate births to women who subsequently married are taken into consideration.

TRENDS AND FACTORS OF FERTILITY IN CANADA

position of each ethnic group, nothing is changed in regard to the observations we have already made about ever-married women only. This is because the proportion of ever-married women, by age, does not vary greatly amongst the ethnic groups we have studied, as can be verified from Table J.2, in appendix. It should be pointed out that women of French origin manifest a much lower marriage rate than do women in the other groups, except in the farm environment. The Indian and Eskimo women (in fact, this applies almost solely to Indian women) show a belated nuptiality, except in the urban environment.

Table 6.13 – Number of live-born children per 100 women of all marital status, by age of woman, for selected ethnic groups, Canada by type of residence, 1961

Type of residence and ethnic origin of woman	Age of woman (in years)						
	15-19	20-24	25-34	35-44	45-54	55-64	65+
All types of residence							
British	7	86	218	264	236	239	284
French	5	70	231	353	373	442	540
Jewish	1	49	196	210	184	213	256
Other north-western European ...	8	84	203	258	260	312	402
Asiatic	5	74	170	247	316	408	444
Eskimo and Indian	20	141	369	600	617	581	562
Urban							
British	7	74	200	241	209	219	261
French	5	64	205	300	306	376	485
Jewish	1	49	194	213	181	207	345
Other north-western European ...	8	74	182	223	223	275	374
Asiatic	5	75	162	229	290	366	446
Eskimo and Indian	20	117	276	447	491	509	540
Rural non-farm							
British	12	128	273	331	308	317	348
French	6	102	302	457	478	554	644
Other north-western European ...	12	120	246	303	295	354	438
Asiatic	7	67	219	308	366	479	436
Eskimo and Indian	20	144	387	633	630	594	564
Rural farm							
British	5	105	272	330	321	323	372
French	2	107	330	573	667	717	737
Other north-western European ...	4	96	270	351	362	401	471
Eskimo and Indian	17	146	417	608	722	584	567

SOURCE: These rates were established by multiplying the number of live-born children per 100 ever-married women (DBS, *Census of Canada, 1961*, Bulletin 4.1-8, Table H4) by the percentage of women ever married in each age group (Table J.2, in appendix).

GRAPH 6.9

NUMBER OF LIVE-BORN CHILDREN PER 100 WOMEN OF ALL MARITAL STATUS, BY AGE OF WOMAN, FOR SELECTED ETHNIC GROUPS, CANADA, BY TYPE OF RESIDENCE, 1961

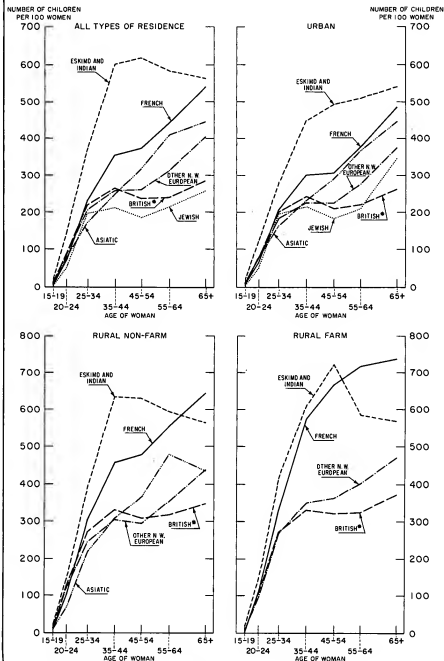


Table 6.14 - Number of live-born children per 1,000 women ever married, by age and mother tongue of woman, Canada, by type of residence, 1961

Type of residence and mother tongue	Age of woman (in years)										
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All types of residence											
English	760	1,366	2,195	2,708	2,899	2,878	2,676	2,582	2,687	2,902	3,227
French	715	1,342	2,345	3,182	3,918	4,344	4,332	4,608	5,052	5,577	6,372
Other	646	1,192	1,919	2,424	2,717	2,981	3,028	3,171	3,458	3,811	4,697
Urban											
English	705	1,248	2,032	2,525	2,686	2,620	2,409	2,302	2,428	2,625	2,986
French	700	1,248	2,146	2,838	3,413	3,667	3,587	3,844	4,317	4,930	5,878
Other	529	1,040	1,671	2,105	2,318	2,453	2,474	2,654	2,906	3,377	4,340
Urban 100,000+											
English	658	1,138	1,881	2,364	2,515	2,431	2,189	2,102	2,211	2,401	2,797
French	699	1,189	2,008	2,604	3,099	3,288	3,142	3,350	3,860	4,340	5,373
Other	471	973	1,568	1,988	2,169	2,285	2,307	2,488	2,709	3,122	4,025
Rural non-farm											
English	911	1,688	2,651	3,224	3,472	3,547	3,339	3,242	3,313	3,605	3,822
French	761	1,653	2,890	4,035	4,906	5,485	5,484	5,504	6,029	6,505	7,156
Other	889	1,703	2,773	3,483	3,997	4,349	4,241	4,205	4,519	4,681	5,351
Rural farm											
English	730	1,583	2,595	3,178	3,468	3,484	3,394	3,366	3,358	3,586	4,069
French	727	1,555	3,107	4,527	5,788	6,673	6,996	7,345	7,603	8,040	8,044
Other	623	1,458	2,485	3,218	3,636	3,894	4,034	4,289	4,665	4,820	5,597

SOURCE: DBS, *Census of Canada, 1961*, Vol. IV, Table H9.

3. MOTHER TONGUE

If a single characteristic were to be chosen to identify cultural groups, it is probably the mother tongue that would be chosen. Ethnic origin may, in many cases fulfil the same function; but, in other cases, this latter characteristic is scarcely more than a memento kept alive by a surname. It is merely a reminder of a paternal ancestor who immigrated to America, sometimes many centuries ago, whereas mother tongue involves the person enumerated in the census. According to census definition, mother tongue is the first language spoken by an individual, provided he still understands it. In this section, consideration will be given to the two major linguistic groups in Canada, English and French; all others shall be grouped within a single class. In 1961, there were 2,171,000 women ever married, between the ages of 15 and 65 years, whose mother tongue was English. Slightly less than half this number or 969,000 women had French as their mother tongue and finally there were 656,000 women whose mother tongue was neither English nor French. This is how each of these groups was distributed by type of residence:

<u>Mother tongue</u>	<u>Urban</u>	<u>Rural non-farm</u>	<u>Rural farm</u>
English	73.2%	17.9%	8.9%
French	72.8%	17.1%	10.1%
Other	72.5%	13.8%	13.7%

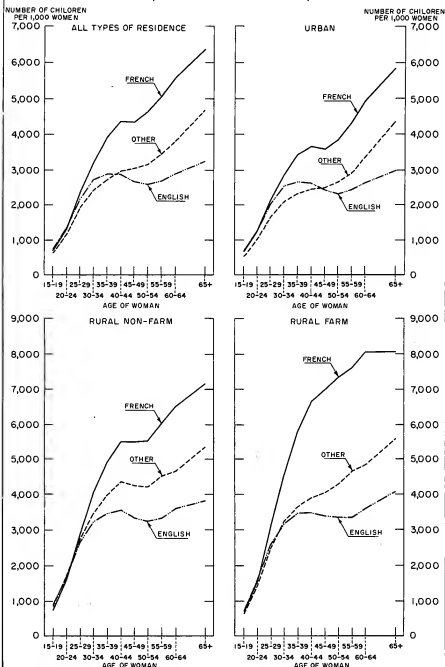
It will be noted, in comparing Table 6.14 with Table 6.11, or Graph 6.10 with Graph 6.7 that, in regard to each type of residence, the fertility of English-speaking women is just about identical with that of British ethnic group and the same remark is true of French-speaking women and women of French ethnic stock. In both cases, however, the fertility of the linguistic group is slightly higher than the fertility of the ethnic group. The differences are so minimal, however, that there is no need to stress the differences any further. In this section, emphasis will be laid on two points: (a) distribution of women by the number of children they have borne from which parity-progression ratios can be calculated; (b) the difference in fertility levels between the two linguistic groups while other factors such as religion, education, husband's occupation or income remain constant.

DISTRIBUTION BY NUMBER OF CHILDREN AND PARITY-PROGRESSION RATIOS

For the three linguistic groups studied, there appears to be a reduction in the number of women married or ever married who are childless. This can be checked by comparing, in Table 6.15, the women in the 35-39 age

GRAPH 6.10

NUMBER OF LIVE-BORN CHILDREN PER 1,000 WOMEN EVER MARRIED,
BY AGE AND MOTHER TONGUE OF WOMAN,
CANADA, BY TYPE OF RESIDENCE, 1961



Source: Table 6.14

group, and the women aged 45-49 (all types of residence). However, the women of over 65 years and whose mother tongue is neither English nor French show a lower proportion of infertile women than do any of the groups of women in the 35-39 age group. For all age groups, except the 20-24 age group, the English-speaking women manifest higher concentrations than French-speaking women in categories of women corresponding to a small number of children (1 to 3). Among French-speaking women, the fraction represented by those who have borne seven or more children is very high, but nevertheless decreases rapidly: 46% for women over 65 years; 23% for those in the 45-49 age group. For these two age groups, the percentage of English-speaking women is only 12 and 6 respectively, which is in effect four times less.

The almost proverbially high fertility of French-Canadian families manifests itself in an evident way: age being equal, the average of the number of women who have borne at least seven children is higher among the urban French-speaking than among the English-speaking women living on a farm (41% as against 19% in the case of women over 65 years of age). Another exceptional fact should be noted: almost two thirds of the French-speaking women, aged over 65, and living on a farm in 1961, had borne at least seven children. On average, these women had each borne slightly more than eight children (see Table 6.14). But performances of this type have seen their day. The average number of children borne by women with the same education and in the same environment, but aged 45 to 50 was only seven, in 1961.

It is amongst women whose mother tongue is neither French nor English that the decrease in the proportion having large families has been most rapid and this trend is particularly marked in the urban centres. Moreover, this goes hand in hand with the marked drop in fertility of this linguistic group.

Comparison of two percentages in Table 6.15 does perhaps have some biological significance: 6.0% of the farm-dwelling women of French mother tongue aged 65 and over remained sterile whereas the percentage was only 4.6% for those aged between 35 and 40. This difference is highly significant, statistically speaking. It would be surprising if a larger proportion of the women over 65 had *voluntarily* remained infertile, and we can believe that the great improvement in sanitary conditions has resulted in the reduction in the proportion of women who are physiologically sterile. However, there is a reservation to be formulated in regard to this interpretation. The difference may be due to the fact that the younger women have married earlier. This fact cannot be verified within the scope of this study, but it would be a matter of some surprise were it to be the sole explanation for the decrease in the fraction of infertile women.

Table 6.15 – Percentoge distribution of women ever married by number of live-born children, for selected age groups: women of English, French or other mother tongue, Canada, by type of residence, 1961

Type of residence, age and mother tongue	Number of children							
	0	1	2	3	4	5	6	7+
All types of residence								
20-24 years								
English	26.2	32.5	26.1	10.8	3.3	0.8	0.2	0.1
French	24.7	36.8	23.9	10.2	3.2	0.8	0.3	0.1
Other	28.9	38.5	22.4	7.2	2.2	0.6	0.2	0.0
35-39 years								
English	9.0	12.5	25.8	22.4	14.1	7.3	4.0	4.9
French	8.8	9.7	15.4	17.0	14.4	10.9	7.5	16.3
Other	9.9	15.5	28.5	20.8	11.4	6.1	3.0	4.8
45-49 years								
English	13.7	16.7	25.8	18.1	10.6	5.8	3.5	5.8
French	12.8	10.7	13.5	12.8	10.9	8.9	7.4	23.0
Other	11.3	15.7	23.8	18.2	11.8	6.8	4.2	8.2
65 years and over								
English	14.3	14.6	18.6	15.8	11.5	7.8	5.5	11.9
French	11.4	6.1	6.8	7.3	7.4	7.8	7.3	45.9
Other	7.5	8.3	18.8	13.4	12.7	10.5	8.6	26.1
Urban								
35-39 years								
English	9.8	13.7	27.5	22.7	13.4	6.4	3.1	3.4
French	10.0	11.1	17.8	19.0	14.8	10.5	6.4	10.4
Other	11.3	18.2	31.4	21.1	9.9	4.5	1.8	1.8
65 years and over								
English	15.0	15.8	19.9	16.2	11.4	7.2	5.0	9.5
French	12.4	7.0	7.9	8.2	8.0	8.3	7.6	40.6
Other	7.8	9.3	14.6	14.6	13.2	10.4	8.3	21.8
Rural non-farm								
35-39 years								
English	7.0	9.5	21.1	21.2	15.2	9.7	6.3	10.0
French	6.5	6.7	10.2	13.2	14.0	12.2	9.4	27.8
Other	6.6	8.7	20.0	17.4	13.9	9.1	6.6	17.7
65 years and over								
English	14.0	11.5	14.6	14.2	11.3	9.3	6.8	18.3
French	10.8	4.8	4.6	5.4	6.4	6.6	7.0	54.4
Other	8.1	6.2	9.3	11.5	11.2	10.5	8.5	34.7
Rural farm								
35-39 years								
English	5.5	8.0	20.5	22.6	18.5	10.9	6.4	7.6
French	4.6	4.1	6.8	10.1	12.3	11.8	11.4	38.9
Other	5.2	6.6	19.6	22.2	17.7	12.3	6.8	9.6
65 years and over								
English	8.2	10.3	15.2	15.9	13.7	10.0	8.0	18.7
French	6.0	2.9	3.9	5.1	5.9	6.4	6.0	63.8
Other	4.8	6.5	8.5	10.2	12.8	11.2	10.7	35.3

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

In Graph 6.11, we have represented the parity-progression ratios calculated on the basis of the distribution by number of children. It is from the parity-progression ratio for two to three children that the difference between the linguistic groups (and also between the two age groups) becomes important. Amongst women over 65, those who belong to "other" linguistic groups stand in an intermediary position, but among women between 35 and 39 years of age, the figures for the English-speaking and "others" are quite similar. A peculiarity should be noted with regard to French-speaking women: in all types of residence, women of over 65 years record a lower parity-progression ratio for 0 to 1 child than for 1 to 2 children. This is a characteristic of non-Malthusian populations.¹⁰

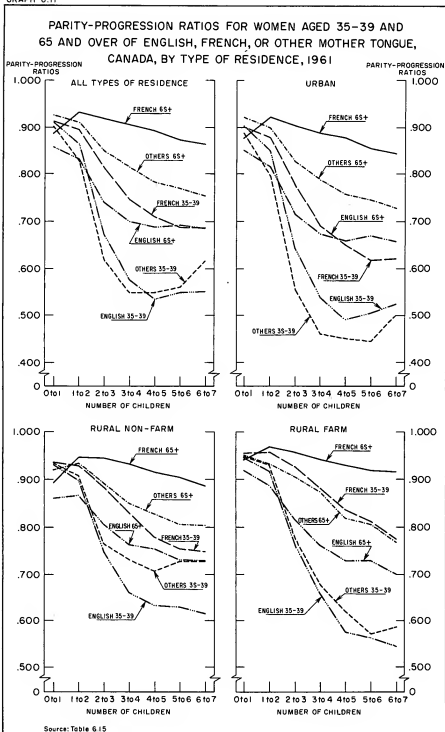
THE REAL ROLE OF MOTHER TONGUE

What is of major interest under this heading is the comparative fertility of women of English and French mother tongue. In Canada, these two languages are related, in a different way, to other characteristics. The most striking example we can give is the association between mother tongue and religion: almost all the French-speaking people are Catholic while the majority of English-speaking people are Protestant. The result is that the excess fertility characteristic of women of French mother tongue could be attributable, at least in part, to the fact that they are Catholic in a higher proportion than are English-speaking women. But it is not merely differences in religion that are masked by the differences in languages; the distribution of women for the two linguistic groups by schooling, husband's income or occupation is not the same and these factors may also contribute to a difference in fertility. We will therefore set forth to examine what difference there is in the fertility of English- and French-speaking women, when a great many other factors are held constant. There is almost no limit to the number of these factors and a choice must be made. This choice is limited, in the first place, by the data available from the census; secondly, by the fact that a great number of factors cannot be taken into account at the same time without running the risk of finding ourselves in the presence of too many sub-classifications, each of which would comprise too small a number of women to ensure that the fertility rates measured would be sufficiently valid.

The fertility of women whose mother tongue is English shall be compared with that of women whose mother tongue is French, but for Catholics

¹⁰Cf. Louis Henry, *Fécondité des mariages*, Paris, P.U.F., 1953, pp. 111-112.

GRAPH 6.11



only.¹¹ Furthermore, each comparison shall be for clearly specified groups in regard to the husband's and the wife's level of schooling and the husband's income. The women in two age groups shall be studied (35-39 years and 45-49 years). Finally, the types of residence will be examined as a whole (Table 6.16), and then the metropolitan areas (Table 6.17).

The results shown on these tables are quite amazing. They certainly disprove the generally accepted notion that the fact of belonging to the French cultural group in Canada, is a factor of high fertility. This is true if the comparison is limited to the two linguistic groups, as they exist in reality, that is to say, with all the social and religious characteristics peculiar to these two groups. However, once we eliminate the influence of these accessory characteristics, superior fertility of the French-speaking women no longer seems to be quite so clear. The result of this analysis is nevertheless not simple. Generally speaking, among women in the 45 to 50 age group, the difference in the fertility between the two languages is about 5% in favour of the French-speaking group; but among women between 35 and 40 years of age, the English-speaking Catholics are the more fertile, their excess being on the whole about 1%. In fact, these differences are rather more complex as will be seen, on examining Table 6.16.

When, for each combination of husband's and wife's schooling level, we calculate an average of the ratios which appear in this table for the three classes of income grouped between \$1,000 and \$7,000, the following results are obtained:

<u>Schooling</u>		<u>Average ratio</u>	
<u>Wife</u>	<u>Husband</u>	<u>35 - 39 years</u>	<u>45 - 49 years</u>
Elementary	Elementary	99	103
Elementary	Secondary	105	109
Secondary	Elementary	95	112
Secondary	Secondary	95	101
Average of the four schooling levels		98.5	106.2

No systematic pattern emerges from these averages. They are not widely scattered from the figure 100, which corresponds to equal fertility of the two linguistic groups.

¹¹There are too few French-speaking Protestants to make the same series of comparisons for Protestants.

Table 6.16 – Comparative fertility of married women of English and French mother tongue (Catholics only), for selected combinations of schooling of spouses and income of husband, Canada, total areas, 1961

(Women aged 35-39 and 45-49 years)

Characteristics of wife and husband			35-39 years			45-49 years		
			Number of live-born children per 1,000 women			Number of live-born children per 1,000 women		
Schooling		Income of husband (in dollars)	English	French	French/English × 100 ^a	English	French	French/English × 100 ^a
of wife	of husband							
Elementary	Elementary	5- 7,000	4,250	4,455	105	4,426	4,650	105
"	"	3- 5,000	4,143	4,183	101	4,078	4,308	106
"	"	1- 3,000	4,768	4,382	92	4,878	4,841	99
"	Secondary	5- 7,000	3,325	3,759	113	2,769	3,607	130
"	"	3- 5,000	3,293	3,439	104	3,465	3,417	99
"	"	1- 3,000	3,564	3,458	97	3,380	3,328	98
Secondary	Elementary	5- 7,000	3,598	3,834	107	3,537	4,336	123
"	"	3- 5,000	3,678	3,582	97	3,477	3,765	108
"	"	1- 3,000	3,844	3,145	82	3,701	3,846	104
"	Secondary	10,000+	3,620	3,480	96	2,917	3,440	118
"	"	7-10,000	3,172	3,236	102	3,032	3,482	115
"	"	5- 7,000	3,297	3,219	98	2,931	3,384	115
"	"	3- 5,000	3,108	2,901	93	2,836	2,985	105
"	"	1- 3,000	2,992	2,835	95	3,356	2,762	82
"	University degree	10,000+	3,547	3,284	93	3,211	3,215	100
"	University degree	7-10,000	3,133	2,994	96	3,018	2,848	94

^a Fertility of French-speaking women divided by that of English-speaking women, this rate being multiplied by 100.

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

A similar calculation can be worked out by taking the average of all the educational levels corresponding to a given income. This is the result obtained:

<u>Husband's income</u>	<u>Average ratio</u>	
	<u>35 - 39 years</u>	<u>45 - 49 years</u>
\$5,000 to \$7,000.....	106	118
\$3,000 to \$5,000.....	99	105
\$1,000 to \$3,000.....	92	96
Average of these three income categories	99.0	106.3

One trend is clearly apparent: the lower the income, the lower the fertility of the French-speaking women in comparison to the fertility of the English-speaking women. For income group \$5,000 to \$7,000 the French-speaking group rates higher than the English by 6% (35-39 years) and 18% (45-49 years); but in the lowest income group, the French language is associated with a fertility lower by 8% and 4%, respectively.

A similar calculation was made using information in Table 6.17, referring to women living in metropolitan areas. The results do not markedly differ from the earlier results and will not be listed here.

This rather surprising result should be checked against slightly different data: instead of comparing English- and French-Catholics and taking them by categories based on schooling level of spouses and husband's income, we compared women whose schooling and husband's occupation were the same. By averaging the ratios¹² for women with primary and secondary school training in the five occupational groups studied, the following results are obtained:

<u>Husband's income</u>	<u>Average ratio</u>	
	<u>35 - 39 years</u>	<u>45 - 49 years</u>
Professional and technical	106	122
Clerical	103	108
Protective service	100	96
Craftsmen	101	110
Labourers	100	113

¹²Fertility of French-speaking women divided by that of English-speaking women, this ratio being multiplied by 100.

Table 6.17 - Comparative fertility of married women of English and French mother tongue (Catholics only), for selected combinations of schooling of spouses and income of husband, Canada, metropolitan areas, 1961

(Women aged 35-39 and 45-49 years)

Characteristics of wife and husband			35-39 years			45-49 years		
			Number of live-born children per 1,000 women			Number of live-born children per 1,000 women		
Schooling		Income of husband (in dollars)	English	French	French/ English × 100 ^a	English	French	French/ English × 100 ^a
of wife	of husband							
Elementary	Elementary	5- 7,000	3,538	3,754	106	3,397	3,574	105
"	"	3- 5,000	3,689	3,436	93	3,260	3,521	108
"	"	1- 3,000	3,712	3,346	90	3,929	3,360	86
"	Secondary	5- 7,000	2,754	3,363	122	2,093	3,076	147
"	"	3- 5,000	2,719	3,130	115	3,161	2,902	92
Secondary	Elementary	5- 7,000	3,272	3,355	103	2,767	3,454	125
"	"	3- 5,000	3,049	3,078	101	2,723	3,115	114
"	"	1- 3,000	3,080	2,556	83	2,934	2,918	99
"	Secondary	10,000+	3,598	3,236	90	2,836	3,390	120
"	"	7-10,000	3,042	3,048	100	2,782	2,946	106
"	"	5- 7,000	3,148	2,912	93	2,681	3,098	116
"	"	3- 5,000	2,883	2,623	91	2,519	2,571	102
"	"	1- 3,000	2,451	2,578	105	2,804	2,285	81
"	University degree	10,000+	3,253	3,015	93	2,870	3,031	106

^aFertility of French-speaking women divided by that of English-speaking women, this rate being multiplied by 100.

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

Once again, the ratios are higher for the women in the 45-49 age group. Furthermore, even for women aged 35 to 40, the ratios are equal to or above 100, but only slightly so. The calculation might be worked out in reverse: calculate the average of the ratios in these five occupational groups for the elementary and secondary schooling levels. The following results are obtained:

<u>Wife's schooling</u>	<u>Average ratio</u>	
	<u>35 - 39 years</u>	<u>45 - 49 years</u>
Elementary.....	107	117
Secondary	96	103

It is quite clear that the excess fertility of French-speaking women is more particularly associated with a low schooling level, and this conclusion had not been quite so clear when the husband's income, rather than his occupation had been examined.

The results of the analysis should now be summarized. The fact that they are of French culture seems to be a factor of excess fertility for women between 45 and 50 years of age in 1961, but this excess fertility is not very high, except in the case of women whose husbands have a substantial income or a professional or technical occupation. Amongst women aged from 35 to 40, the French language is no longer associated with high fertility in any systematic way. Indeed, in many cases, the opposite is true. Furthermore, it should be remembered that the fertility of French-speaking women, as compared to that of English-speaking women decreases as the husband's income is lower and as the woman's schooling is higher. These two latter facts are not necessarily paired, in reality, and this is perhaps why it is sometimes difficult to gain any clear idea of what does take place.

This very slight superiority in the fertility of French-speaking women constitutes a very different result indeed from the result obtained by Enid Charles, based on 1941 Census data. It should be added, however, that Charles studied the women who were between the ages of 45 and 55 in 1941. The survivors were therefore between 65 and 75 years of age in 1961. This author, in eliminating the influence that might have been exercised by the wife's education, religion, residence and the fact of her being born on a farm, or not, found that French-speaking women had an excess fertility in the order of 40%, as compared to English-speaking women.¹³ In fact, if the

¹³The average number of children per woman (standardized mean which appears at the bottom of Table XXXI in her study) is 3.33 for English-speaking women and 4.65 for French-speaking women. (Cf. Enid Charles, *The Changing Size of the Family in Canada*, Ottawa, Queen's Printer, 1948, p. 68.)

Table 6.18 – Fertility of Catholic women ever married of English and French mother tongue: comparison of Enid Charles' results with those of the 1961 Census

Schooling ^a of woman and type of residence	Women aged 45-54 in 1941 ^b			Women aged 65-74 in 1961			Women aged 45-54 in 1961		
	Number of live-born per ever-married woman								
	English	French	French/ English × 100 ^c	English	French	French/ English × 100 ^c	English	French	French/ English × 100 ^c
	1	2	3	4	5	6	7	8	9
Elementary									
Urban	4.06	5.76	142	4.10	5.66	138	3.33	3.66	110
Rural	5.42	7.84	145	5.40	7.52	139	5.07	6.55	129
Secondary									
Urban	3.20	4.82	151	3.25	4.65	143	2.73	2.99	109
Rural	4.58	6.74	147	4.57	6.76	148	4.21	5.39	128
Post-secondary									
Urban.....	2.66	4.04	152	2.90	4.45	153	2.38	2.40	101
Rural.....	3.32	5.84	176	3.43	6.37	186	2.92	5.11	175

^aIn the 1941 Census, the educational levels had been defined as number of years at school. We considered 0-8 years to mean elementary schooling, 9-12 years, secondary schooling and 13 years or more, post-secondary. On the other hand, for data derived from the 1961 Census, the figures corresponding to the post-secondary level are the arithmetic mean of the two categories: some university and university degree.

^bEnid Charles' data (women aged 45-54 in 1941) contained a differentiation between women born on a farm and women not born on a farm. The number of children given here are the arithmetic mean of these two categories.

^cRatio of the fertility of French-speaking women to the fertility of English-speaking women, multiplied by 100.

study is limited to Catholic women, we find a difference of more than 50% between the two languages. Why is this difference so marked, when the difference found in the case of women aged 45-49 in 1961 was so much less, and almost non-existent for women in the 35-39 age group? Is this divergence due to the fact that Charles studied women belonging to generations prior to the generation we studied or should it be attributed to the fact that Charles, in her analysis, did not take into account the income of the husband, his education or his occupation? We shall attempt to reply to this question on the basis of information in Table 6.18.

We brought into this table, with some changes, the data from Charles relating to women aged 45-54 in 1941 (English- and French-Catholics). The ratio of the fertility of French women to that of English women varies between 142 and 176 (Column 3) and the average value is 152. The survivors of these women were aged 65-74 in 1961 and we have incorporated analogous data from the 1961 Census. The ratios in Column 6 are only very slightly different from those in Column 3: their average is 151. Let us now compare the ratios in Column 6 with those of Column 9 which concern women twenty years younger. For the latter, the ratios are much lower, averaging 125. Clearly then, the difference in fertility between English and French women has been reduced by half. This reduction is much higher in the urban centres than in rural areas; in the case of women aged 45-54 in 1961, the average of the ratios for urban centres is 107, that is to say, a figure very similar to the figure established in the preceding analysis and in which urban women clearly predominated. The average of the ratios relating to rural women (Column 9) was 144; this is markedly affected by the very high ratio of rural women who received a post-secondary school education.

The comparison with Enid Charles' results indicates that in the case of women whose fertility period has just been completed—and this is probably even more true of those who follow them—the difference in fertility rates which results from participation in the French or the English cultural group is much less than was the case in the past, at least in the urban centres; the difference remains high in the rural areas. Social factors (schooling level, income, occupation) also have a part to play, as we observed previously, but their importance is nevertheless limited.

This is another aspect of the convergence of different segments of the Canadian population, in regard to the fertility of couples. This one is quite remarkable.

4. RELIGION

Of all the factors that may affect fertility, religion is probably the one which most explicitly affects the behaviour of couples. This is certainly true of catholicism, for even today, Catholic doctrine most insistently teaches couples not to impede the birth of children except for a very serious reason.¹⁴ In addition, there are official prohibitions, which are still obeyed, against the use of the so-called artificial contraceptives and this makes family planning even more difficult in the case of the many Catholics who faithfully respect these prescriptions. So it should not be surprising to find, as several American demographers have done, that there is a persistent excess fertility amongst Catholic couples as compared to couples of other faiths. This would even seem to be one of the rare elements resisting the convergence we observed with respect to most other factors in so far as the behaviour of couples in matters of fertility is concerned. This is the conclusion to be drawn from the evolution of child-woman ratios (number of children aged 0-4 per 1,000 women aged 15-49) between 1931 and 1961. We shall deal with these ratios first and then analyse the number of live-born children per woman ever married, the distribution of women by number of children and parity-progression ratios. Thereafter, we will undertake a brief study of the fertility of marriages amongst Catholics, amongst Protestants and of inter-religious marriages. We shall then attempt to assess what difference in fertility rates persists between Catholics and Protestants, when the effect of other factors is annulled.

CHILD-WOMAN RATIOS

These ratios have been worked out for nine religious groups, for each census year from 1931 to 1961, separately for rural and urban regions. These will be found in Table 6.19 and Graph 6.12. The lack of convergence is remarkable and, in urban centres, there is even a slight trend towards an increase in the differences. It should be noted that these ratios refer to women of all marital status. The women of all religions simultaneously participate in similar variations, except Judaic women, whose fertility rate drops between 1951 and 1961, and the rural Anglican women, who also register a slight drop.

¹⁴On this topic, one may find interest in reading the paper, "The Americanization of Catholic Reproductive Ideals," by Judith Blake, in *Population Studies*, Vol. 20, No. 1, July 1966, pp. 27-43.

**Table 6.19 – Child-woman ratio^a for selected religions,
Canada, urban and rural, 1931 to 1961**

Religion	Urban				Rural			
	1931	1941	1951	1961	1931	1941	1951	1961
Catholic ^b	428	334	463	544	665	575	734	742
Anglican	276	232	415	421	435	382	622	601
Baptist	279	251	382	443	473	432	575	581
United Church	264	236	414	463	435	396	583	586
Lutheran	294	238	308	441	519	417	477	542
Mennonite	383	297	340	528	740	571	583	710
Mormon	434	372	528	615	601	516	656	667
Presbyterian	267	209	341	389	421	344	507	515
Judaic	241	208	391	349	343	261	456	390

^a Number of children aged 0-4 per 1,000 women aged 15-49.

^b Includes the Greek, Roman and Ukrainian Catholics.

SOURCE: DBS, *Census of Canada, 1931*, Vol. I, Table 43, p. 798; 1941, Vol. III, Table 14, p. 204; 1951, Vol. II, Table 7; 1961, Bulletin 1.3-3, Table 85.

NUMBER OF CHILDREN BORN PER EVER-MARRIED WOMAN

We shall here examine six religious groups for which the number of women ever married from 15 to 65 years of age is given in Table 6.20, as is the distribution of each of these groups, by type of residence. The religious groups examined were not chosen primarily because of their size, but because some of them possess particular characteristics. The Hutterites and Mennonites are a good deal less urbanized than the others, the Jews are almost completely urbanized.

**Table 6.20 – Distribution of women ever married, aged
15-64, for six religious groups, and percentage
distribution by type of residence, Canada, 1961**

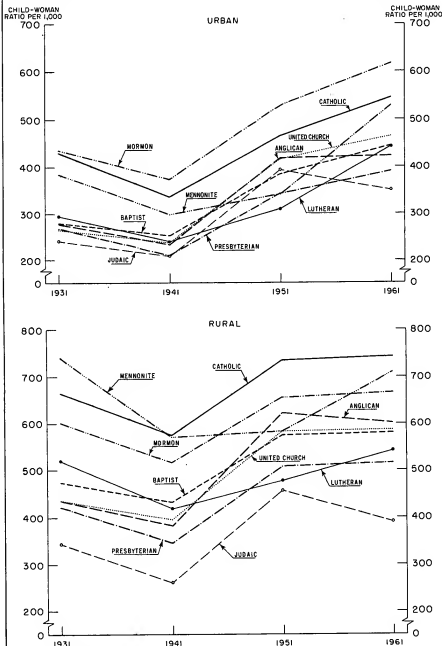
Religious group	Distribution by religious group		Percentage distribution of each religious group by type of residence		
	Absolute number	In %	Urban	Rural non- farm	Rural farm
Catholic ^a	1,635,533	43.1	74.5	16.0	9.5
Greek Orthodox	55,277	1.5	74.7	9.1	16.2
Protestant ^b	1,873,330	49.3	71.7	18.4	9.9
Hutterite and Mennonite	27,564	0.7	38.8	20.3	40.9
Mormon	10,426	0.3	68.6	17.2	14.2
Judaic	62,967	1.7	99.6	0.2	0.2

^a Roman and Ukrainian.

^b We took into account only the following sects: Anglican, Salvation Army, Baptist, United Church, Lutheran, Pentecostal, Presbyterian.

GRAPH 6.12

NUMBER OF CHILDREN AGED 0-4 PER 1,000 WOMEN AGED 15-49,
FOR SELECTED RELIGIONS, CANADA, URBAN AND RURAL, 1931 TO 1961



Source: Table 6.19

NUMBER OF CHILDREN BORN

In Table 6.21 and Graph 6.13 will be found the number of live-born children per 1,000 women ever married, by age of woman and for the different types of residence. None of these rates are based on less than 50 women. For all types of residence, the Hutterites and Mennonites record the highest fertility, but this rate drops quickly; women now between 45 and 50 years of age having borne, on average, only 4.7 children, whereas those over 65 years bore 6.0. The Catholics fall into second place and their fertility has also rapidly dropped: 5.7 children for women aged 65 and over, 4.0 children for women aged 45-49. This represents a 30% drop between these two groups of cohorts separated, on average, by a 27-year interval. But the relative decrease is still higher among Greek Orthodox women, whose fertility has dropped by 45% within the same interval. The fertility of Mormon women is between that of Catholics and that of Greek Orthodox women; it is particularly high among young women. Finally, one finds Protestant and Judaic women whose fertility seems again to have recovered. But Judaic women aged 35-39, who bore more children than did their elders in the 40 to 60 age group, had just barely reached a number sufficient to the replacement of generations.

In the urban centres, the fertility of these religious groups is of the same order, although levels are lower than for all types of residence taken as a whole. This is not the case of the rural environment (farm or non-farm) where the Catholics have a higher fertility rate than do the Hutterites or Mennonites. As for what is left, the order we have indicated stands. Another point to be noted: the rural Protestants have about the same fertility rate, regardless of whether they live on a farm or not. The relative difference in fertility rates between Protestants and Catholics is particularly high amongst rural farm women: beyond the age of 50, Catholic women's fertility is twice that of Protestant women. In urban centres, fertility of Catholic women is 60% higher than that of Protestant women, at age 50, and 85% at age 65 and over.

Contrary to our earlier observations with regard to the child-woman ratios, however, the differences between religions lessen as we shift from older to younger women.

DISTRIBUTION BY NUMBER OF CHILDREN AND PARITY-PROGRESSION RATIOS

Once again, in various religious groups, we observe a decrease in the number of childless ever-married women, as we shift from women in the 45-49 age group or women 65 and over to women in the 35-39 age group

Table 6.21 - Number of live-born children per 1,000 women ever married, by age and religion of woman, Canada, by type of residence, 1961

Type of residence and religion	Age of woman (in years)										
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All types of residence											
Catholic	740	1,347	2,278	3,019	3,590	3,983	3,950	4,143	4,499	4,966	5,731
Greek Orthodox	521	967	1,651	2,138	2,418	2,594	2,678	3,015	3,271	3,848	4,866
Protestant	752	1,346	2,120	2,588	2,757	2,744	2,566	2,495	2,630	2,839	3,171
Mennonite, Hutterite ...	509	1,199	2,319	3,146	3,934	4,487	4,689	4,611	4,926	5,559	6,045
Mormon	619	1,483	2,675	3,368	3,759	3,448	3,552	3,591	3,596	4,151	4,810
Judaic	105	809	1,729	2,229	2,263	2,106	1,950	1,873	2,060	2,368	3,442
Urban											
Catholic	699	1,238	2,077	2,708	3,152	3,408	3,326	3,497	3,869	4,423	5,252
Greek Orthodox	552	869	1,424	1,918	2,114	2,216	2,300	2,532	2,707	3,290	4,318
Protestant	691	1,215	1,942	2,386	2,531	2,460	2,275	2,202	2,342	2,531	2,919
Mennonite, Hutterite ...	454	1,134	2,054	2,720	3,185	3,575	3,606	3,683	3,995	4,884	5,934
Mormon	633	1,446	2,519	3,209	3,513	3,158	3,083	3,239	3,379	3,932	4,699
Judaic	107	809	1,728	2,237	2,261	2,104	1,949	1,875	2,062	2,365	3,441
Rural non-farm											
Catholic	874	1,729	2,919	3,945	4,708	5,194	5,161	5,189	5,602	5,924	6,652
Greek Orthodox	556	1,328	2,180	2,613	3,170	3,041	2,735	3,563	4,198	5,011	5,910
Protestant	897	1,676	2,594	3,125	3,350	3,431	3,241	3,123	3,247	3,578	3,742
Mennonite, Hutterite ...	571	1,188	2,601	3,393	4,281	4,952	4,705	4,317	5,603	5,445	5,805
Mormon	625	1,721	3,058	3,633	4,462	3,515	3,805	4,037	4,380	4,421	5,500
Rural farm											
Catholic	724	1,589	2,952	4,145	5,131	5,867	6,043	6,332	6,506	6,944	7,251
Greek Orthodox	400	1,330	2,618	3,051	3,292	3,546	3,749	4,435	4,819	5,301	6,264
Protestant	722	1,563	2,498	3,065	3,278	3,342	3,237	3,261	3,345	3,497	4,015
Mennonite, Hutterite ...	500	1,328	2,518	3,483	4,450	4,870	5,370	5,353	5,552	6,470	6,630
Mormon	500	1,143	3,063	3,725	4,135	4,320	4,816	4,414	3,863	5,333	4,500

SOURCE: DBS, *Census of Canada, 1961*, Bulletin 4.1-8, Table H8.

GRAPH 6.13

NUMBER OF LIVE-BORN CHILDREN PER 1,000 WOMEN EVER MARRIED,
BY AGE AND RELIGION OF WOMAN, CANADA,
BY TYPE OF RESIDENCE, 1961

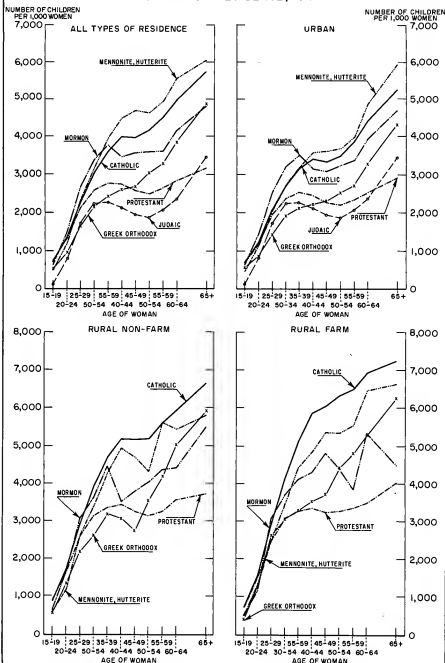


Table 6.22 – Percentage distribution of women ever married by number of live-born children, for women of selected age groups and selected religions, Canada, by type of residence, 1961

Type of residence, age and religious affiliation of woman	Number of live-born children							
	0	1	2	3	4	5	6	7+
All types of residence								
20-24 years								
Catholic	24.9	36.6	23.9	10.1	3.2	0.9	0.3	0.1
Greek Orthodox	37.7	36.9	19.6	4.7	0.9	0.1	0.1	—
Protestant	26.6	32.7	26.1	10.4	3.2	0.7	0.2	0.1
Hutterite and Mennonite	28.6	36.7	23.7	8.6	1.6	0.4	0.2	0.2
Mormon	22.1	30.7	30.1	13.4	2.9	0.4	0.4	—
Judaic	41.5	38.4	18.1	1.8	—	—	—	0.2
35-39 years								
Catholic	9.0	11.2	18.6	18.1	14.1	9.9	6.4	12.7
Greek Orthodox	11.6	16.4	32.0	20.1	10.8	4.7	2.5	1.9
Protestant	9.3	13.4	27.4	22.8	13.4	6.6	3.3	3.8
Hutterite and Mennonite	5.7	3.1	15.6	22.0	20.3	14.5	7.4	11.4
Mormon	6.5	7.6	15.2	20.4	17.7	14.1	7.0	11.5
Judaic	5.9	14.4	41.2	28.6	7.5	1.6	0.4	0.4
45-49 years								
Catholic	12.7	11.9	15.9	14.3	11.3	8.5	6.7	18.7
Greek Orthodox	13.3	15.8	25.1	19.1	12.5	6.4	3.8	4.0
Protestant	13.6	17.5	26.8	18.4	10.4	5.5	3.0	4.8
Hutterite and Mennonite	5.7	5.7	11.7	14.9	17.7	13.1	9.7	21.5
Mormon	11.1	11.6	14.3	19.6	11.5	14.7	7.1	10.1
Judaic	11.0	20.2	40.8	20.8	5.8	0.8	0.4	0.2
65 years and over								
Catholic	11.2	7.1	8.6	9.2	8.7	8.6	7.7	38.9
Greek Orthodox	6.7	9.0	12.1	12.5	12.2	10.8	7.7	29.0
Protestant	13.9	15.0	19.1	16.1	11.7	7.7	5.4	11.1
Hutterite and Mennonite	8.1	4.4	6.5	7.5	9.4	11.8	8.7	43.6
Mormon	8.1	7.6	10.6	9.6	13.7	10.8	9.8	29.8
Judaic	6.9	8.2	20.1	20.7	18.4	10.2	7.6	7.9
Urban								
35-39 years								
Catholic	10.0	12.8	21.0	19.5	14.2	9.2	5.3	8.0
Greek Orthodox	13.4	18.8	34.8	18.8	9.0	2.8	1.6	0.8
Protestant	10.3	14.8	29.3	22.9	12.4	5.5	2.5	2.3
Hutterite and Mennonite	8.7	4.5	23.3	28.2	14.3	11.2	5.3	4.5
Mormon	7.9	7.9	18.4	22.0	17.8	11.0	4.1	10.9
Judaic	5.9	14.4	41.2	28.7	7.4	1.6	0.4	0.4
65 years and over								
Catholic	12.1	8.0	10.0	10.2	9.3	9.1	7.7	33.6
Greek Orthodox	7.7	11.2	14.0	13.3	13.9	11.0	7.2	21.7
Protestant	14.6	16.3	20.6	16.5	11.4	7.0	4.8	8.8
Hutterite and Mennonite	7.9	4.9	7.1	8.9	8.1	11.4	8.1	43.6
Mormon	8.6	9.1	10.5	10.1	11.9	12.9	10.1	26.8
Judaic	6.9	8.1	20.2	20.6	18.3	10.3	7.7	7.9

Table 6.22 – Percentage distribution of women ever married by number of live-born children, for women of selected age groups and selected religions, Canada, by type of residence, 1961 – Concluded

Type of residence, age and religious affiliation of woman	Number of live-born children							
	0	1	2	3	4	5	6	7+
Rural non-farm								
35-39 years								
Catholic	6.3	7.0	12.3	14.4	13.8	11.8	9.0	25.4
Greek Orthodox	5.2	11.6	25.2	17.5	19.3	10.6	5.9	4.7
Protestant	7.3	10.0	22.4	21.6	15.1	9.0	5.7	8.9
Hutterite and Mennonite	3.9	3.9	10.1	21.9	24.2	13.2	7.9	14.9
Mormon	—	7.8	12.7	20.5	10.2	20.5	12.7	15.6
65 years and over								
Catholic	10.8	5.3	5.7	6.6	7.3	7.5	7.4	49.4
Greek Orthodox	4.2	5.8	6.9	12.2	8.0	11.6	8.0	43.3
Protestant	13.6	11.8	15.0	14.7	11.6	9.3	6.9	17.1
Hutterite and Mennonite	8.8	3.4	8.3	7.8	10.7	12.2	8.3	40.5
Mormon	8.5	—	10.9	10.9	13.3	4.3	8.6	43.5
Rural farm								
35-39 years								
Catholic	4.9	4.9	10.3	13.3	14.1	12.2	10.7	29.6
Greek Orthodox	6.0	6.4	21.5	28.7	15.5	10.7	5.2	6.0
Protestant	5.5	8.5	22.4	24.1	18.3	10.0	5.4	5.8
Hutterite and Mennonite	4.0	1.6	11.3	17.0	23.7	17.7	9.0	15.7
Mormon	7.6	5.8	4.0	13.5	25.1	21.1	13.5	9.4
65 years and over								
Catholic	6.0	4.0	5.0	7.1	7.7	7.7	7.4	55.1
Greek Orthodox	5.0	2.5	9.4	8.8	9.5	8.8	10.1	45.9
Protestant	8.0	10.5	15.4	15.9	14.0	10.2	8.3	17.7
Hutterite and Mennonite	7.7	4.6	2.6	3.9	10.4	12.3	10.4	48.1
Mormon	3.7	10.4	10.4	3.7	28.5	7.4	10.4	25.5

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

(Table 6.22). There is also a decrease in the number of large families. The first change has mainly taken place between women aged 45-49 and those aged 35-39. The second change goes back in the past since the decrease in the percentage of women who had seven children or more took place mostly between women aged 65 and over and those in the 45-49 age group. In this regard, the Greek Orthodox women have undergone radical change: the proportion of women who had seven children or more is 29% for those aged 65 and over, 4% for those aged 45-49 and only 2% for those aged 35-39. The Greek Orthodox women now belong to the religious groups

where the smallest numbers of large families are to be found, alongside Protestant and Judaic women. The latter are characterized by their high concentration in the categories corresponding to 1, 2 or 3 children; 6% of the women aged 35-39 in this religious group have remained childless while only 10% have had four or more children. Even in comparing the fertility of Judaic women with the fertility of women in other religious groups, as regards urban centres only, this marked concentration persists amongst Judaic women as compared to other groups.

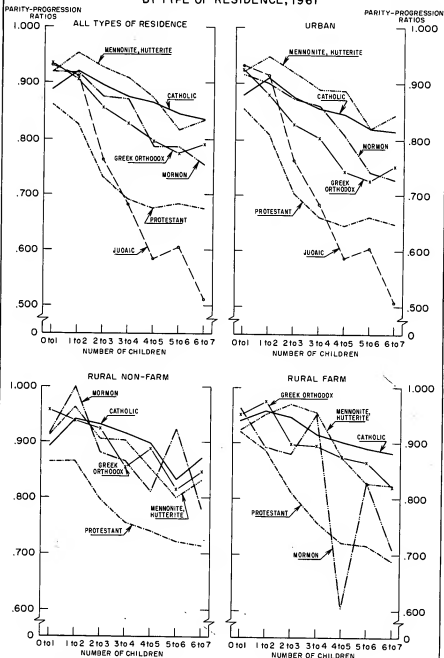
With only two exceptions (urban women in the 35-39 age group and women aged 65 and over), it is not amongst either the Hutterites or the Mennonites that the largest numbers of large families are favoured, but amongst Catholics. It is true that the former do not greatly differ from the latter; indeed, sometimes even Greek Orthodox and Mormon women aged 65 and over have large families. In contrast, Protestant women, regardless of age or residence reflect a relatively low proportion of women who have borne many children; the same observation applies to Judaic women.

It is easier to compare the behaviour of women of different religious affiliations by examining the parity-progression ratios. These figures are given in Graphs 6.14 and 6.15, for women aged 35-39 and 65 and over, by residence. Let us examine the older women first. The Hutterite and Mennonite women are, generally speaking, the women amongst whom the parity-progression ratios are greatest; the Catholics follow closely, and indeed exceed the former as regards ratios of higher order (except in the urban environment). Mormon and Greek Orthodox women run at an intermediary level, but are closer to the first two religious groups than to Protestant or Judaic women, who have the lowest ratios.

Amongst women aged 35-39, the religious differences are greater, particularly from the parity-progression ratio for two to three children onwards. Furthermore, the relative position of the religious groups is no longer quite the same; Mormons, on the one hand, and Hutterites and Mennonites, on the other, behave in a very similar manner; their parity-progression ratios are higher than those for Catholic women for first birth orders, but lower for higher orders. The most remarkable change, for women 65 and over, is amongst the Greek Orthodox. The behaviour of the latter now closely resembles that of the Protestant women and, in the urban centres; their parity-progression ratios are clearly lower than those of Protestants. We should point out that few Judaic women are childless, but few among them bear more than two children. Only half the Judaic women who have already had two children bear a third and only a quarter of those who have borne three children, bear a fourth. Finally, an over-all phenomenon should be noted: the regression of large families. Among women aged 65 and over,

GRAPH 6.14

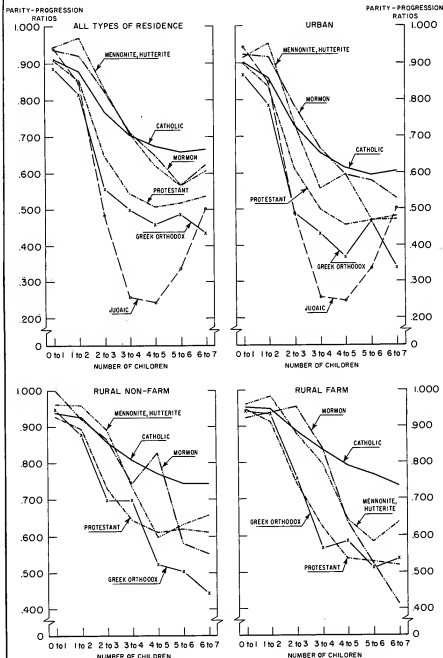
PARITY-PROGRESSION RATIOS FOR SELECTED RELIGIONS,
WOMEN AGED 65 AND OVER, CANADA,
BY TYPE OF RESIDENCE, 1961



Source: Table 6.22

GRAPH 6.15

PARITY-PROGRESSION RATIOS FOR SELECTED RELIGIONS,
WOMEN AGED 35-39, CANADA,
BY TYPE OF RESIDENCE, 1961



Source: Table 6.22

the parity-progression ratios beyond the fourth child run between .68 and .67 for all types of residence (if Judaic women are excepted); amongst women aged 35-39, parity-progression ratios for the same birth orders do not exceed .67.

FERTILITY OF ENDOGAMOUS AND EXOGAMOUS MARRIAGES (PROTESTANTS AND CATHOLICS)

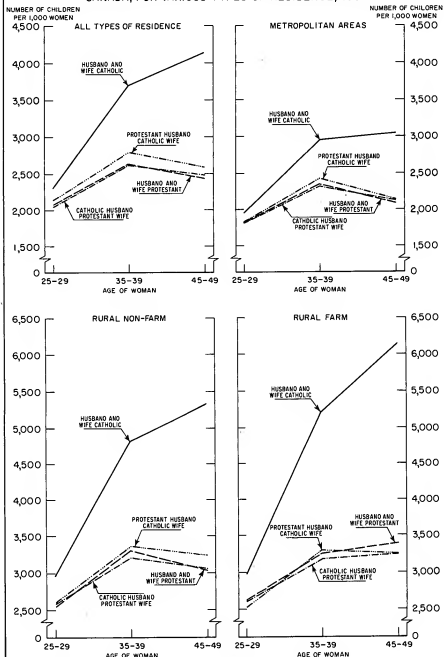
The 1961 Census data enable us to calculate the number of live-born children per woman, bearing in mind the religious affiliation of each of the spouses. This calculation was made, by residence, for the four possible types of marriage combination involving Catholic and Protestant spouses and for women in three age groups: 25-29 years, 35-39 years; and 45-49 years. The results appear in Graph 6.16, for all types of residence, metropolitan and rural (farm and non-farm) areas. It is not surprising to find that marriages involving two Catholic spouses are much more fertile than all other marriages. It might therefore be natural to expect that in a marriage where one spouse is Catholic and the other Protestant, the fertility of the marriage is higher than would be the case were both spouses Protestant. This is not the case at all. Mixed marriages have a fertility very closely approximating that of Protestant marriages. The former even have slightly less children than the latter. It would therefore seem that affiliation to Catholicism will bring about excess fertility only when both spouses are Catholic. It might perhaps be fairer to state that in marriages where one spouse is Catholic and the other Protestant, the loyalty of the Catholic to his religion might be interpreted with some reservation. One may also be led to think that these mixed marriages mainly involve English-speaking Catholics, whose fertility rate is lower than that of Catholics as a whole. This explanation does not stand up to analysis however, because—as will be seen immediately—English-speaking Catholics have a markedly higher fertility than English-speaking Protestants.

THE REAL ROLE PLAYED BY THE DIFFERENCE BETWEEN CATHOLICS AND PROTESTANTS

Religion is not the only difference between Protestant and Catholic women. In Canada, very few Protestants are French-speaking, whereas the majority of Catholics are. There may be other differences, such as husband's income and occupation, or education of the spouses. Therefore, there can be no assurance that the differences observed between Catholics and Protestants are due to their different religious affiliations, so long as the effect exercised by different factors possibly associated with one or the other religion have not been eliminated. Our analysis

GRAPH 6.16

NUMBER OF LIVE-BORN CHILDREN PER 1,000 WOMEN LIVING WITH THEIR HUSBAND, BY RELIGION OF HUSBAND AND WIFE (CATHOLIC OR PROTESTANT), CANADA, FOR VARIOUS TYPES OF RESIDENCE, 1961



Source: Unpublished table.

under this heading will be the same as in the preceding section, in order to measure the influence of the difference between English and French mother tongue. This time, we shall compare the English-speaking Protestants and Catholics, bearing in mind the educational level of the spouses and the husband's income. As in the foregoing section, we shall first of all study the women from all types of residence, and then the women in metropolitan areas. We shall limit our examination to married women in two age groups: 35-39 years and 45-49 years. Finally, a comparison will be drawn with the work by Enid Charles, based on the 1941 Census.

The data in Table 6.23 will be used as the basis for this analysis. All the ratios which appear in the third and sixth columns of figures are below 100; this means that, in all instances, the Protestants have a lower fertility than that of Catholics. Amongst women aged between 35 to 40, these ratios vary between 73 and 90; for women between 45 and 50 years of age, the ratios are between 66 and 93. The extent of the under-fertility of Protestants does not seem associated with their schooling level. Below, for some combinations of level of schooling of the spouses, are the average ratios of the three income categories ranging from \$1,000 to \$7,000:

<u>Schooling</u>		<u>Average ratio</u>	
<u>Wife</u>	<u>Husband</u>	<u>35 - 39 years</u>	<u>45 - 49 years</u>
Elementary	Elementary	81	75
Elementary	Secondary	90	85
Secondary	Elementary	79	72
Secondary	Secondary	81	73
Average of four educational levels		82.8	76.2

Two points should be noted: (a) amongst couples where the wife has elementary schooling and the husband has secondary schooling, the difference between the two religions is lowest; (b) as a whole, the difference in fertility between Catholics and Protestants is higher amongst women in the 45-49 age group (24%) than among those aged between 35 and 40 (17%). However, the conclusion should not be drawn that the difference between religions necessarily diminishes. The Catholics have children more often, past the age of 40, than do Protestants and it may be that the gap widens as these women near their fiftieth year.

We have worked out a similar calculation for each of the three income groups ranging from \$1,000 to \$7,000, and this time, we worked out the

Table 6.23 – Comparative fertility of Catholic and Protestant women (English-speaking only) living with their husband, for selected combinations of schooling of spouses and income of husband, Canada, total areas, 1961
(Women aged 35-39 and 45-49 years)

Characteristics of wife and husband			35-39 years			45-49 years		
			Number of live-born children per 1,000 women			Number of live-born children per 1,000 women		
Schooling		Husband's income (in dollars)	Catholic	Protestant	Protestant/Catholic × 100 ^a	Catholic	Protestant	Protestant/Catholic × 100 ^a
Wife	Husband							
Elementary	Elementary	5- 7,000	4,250	3,297	78	4,426	2,980	67
"	"	3- 5,000	4,143	3,434	83	4,078	3,193	78
"	"	1- 3,000	4,768	3,973	83	4,878	3,853	79
"	Secondary	5- 7,000	3,325	2,964	89	2,769	2,588	93
"	"	3- 5,000	3,293	2,954	90	3,465	2,649	76
"	"	1- 3,000	3,564	3,212	90	3,380	2,951	87
Secondary	Elementary	5- 7,000	3,598	2,904	81	3,537	2,419	68
"	"	3- 5,000	3,678	2,824	77	3,477	2,552	73
"	"	1- 3,000	3,844	2,982	78	3,701	2,777	75
"	Secondary	10,000+	3,620	2,645	73	2,917	2,036	70
"	"	7-10,000	3,172	2,617	83	3,032	2,016	66
"	"	5- 7,000	3,297	2,581	78	2,931	2,134	73
"	"	3- 5,000	3,108	2,473	80	2,836	2,191	77
"	"	1- 3,000	2,992	2,500	84	3,356	2,310	69
"	University degree	10,000+	3,547	2,828	80	3,211	2,244	70
"	University degree	7-10,000	3,133	2,545	81	3,018	2,017	67

^aRatio of the fertility of Protestant women to the fertility of Catholic women, multiplied by 100.

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

average of the ratios of the first four combinations of scholastic achievement. The following are the results:

<u>Husband's income</u>	<u>Average ratio</u>	
	<u>35-39 years</u>	<u>45-49 years</u>
\$5,000 to \$7,000.....	82	72
\$3,000 to \$5,000.....	83	76
\$1,000 to \$3,000.....	84	78
Average of the three income levels	83.0	75.3

One may observe a very slight trend towards an increase in the ratios as income drops; this means that the lower the income, the lesser would be the difference between the two religions.

Slightly different results are obtained for the metropolitan areas. We shall not provide analogous data to those in Table 6.23 for these areas. We shall merely give average ratios, first of all for educational levels, and then for income levels.

<u>Schooling</u>		<u>Average ratio</u>	
<u>Wife</u>	<u>Husband</u>	<u>35-39 years</u>	<u>45-49 years</u>
Elementary	Elementary	80	77
Elementary	Secondary	100	92
Secondary	Elementary	82	77
Secondary	Secondary	81	73
Average of four income levels		85.8	79.8

On the average, the ratios are somewhat higher than for all types of residence taken as a whole. The differences between Catholic and Protestant religions are therefore slightly less in large cities. The following are average ratios for the three income levels:

<u>Husband's income</u>	<u>Average ratio</u>	
	<u>35-39 years</u>	<u>45-49 years</u>
\$5,000 to \$7,000	86	85
\$3,000 to \$5,000	85	78
\$1,000 to \$3,000	83	72
Average of three income levels.....	84.7	75.0

This time, the difference in fertility between Catholic and Protestant women increases as income drops and this is very clearly defined in the case of women between the ages of 45 and 50. We found exactly opposite results for all types of residence as a whole.

Table 6.24 – Fertility of English-speaking Catholic and Protestant^a women ever married:
comparison of Enid Charles' results with those of the 1961 Census

Schooling ^b and residence of woman	Women 45-54 years in 1941 ^c			Women 65-74 years in 1961			Women 45-54 years in 1961		
	Number of live-born children per ever-married woman								
	Catho- lic	Protes- tant	Protestant/ Catholic × 100 ^d	Catho- lic	Protes- tant	Protestant/ Catholic × 100 ^d	Catho- lic	Protes- tant	Protestant/ Catholic × 100 ^d
	1	2	3	4	5	6	7	8	9
Elementary									
Urban.....	4.06	2.93	72	4.10	2.95	72	3.33	2.51	75
Rural.....	5.42	4.02	74	5.40	4.03	75	5.07	3.71	73
Secondary									
Urban.....	3.20	2.24	70	3.25	2.32	71	2.73	1.97	72
Rural.....	4.58	3.12	68	4.57	3.05	67	4.21	2.80	67
Post-secondary									
Urban.....	2.66	1.90	71	2.90	2.03	70	2.38	1.95	82
Rural.....	3.32	2.54	77	3.43	2.58	75	2.92	2.29	78

^a This includes just about all Protestant sects. We attempt to depart as little as possible from Charles' definition.

^b See footnote (a), Table 6.18.

^c See footnote (b), Table 6.18. Cf. Enid Charles, *op. cit.*, p. 68.

^d Ratio of fertility of Protestants to fertility of Catholics, multiplied by 100.

Whatever the case may be, the difference between these two religions is a major one. In relation to the Catholic level, it ranges around 25% for women in the 45 to 50 age group (in 1961) and around 15% for women in the 35 to 40 age group. But there is much reason to expect this latter difference to have increased once these women reach their fiftieth year. We shall now see how these results compare with those of Enid Charles.

COMPARISON WITH THE CHARLES' STUDY

Using 1941 Census data, this author attempted to measure the difference in fertility rates between Catholics and Protestants, after eliminating the influence of mother tongue, woman's scholastic achievement and residence. Charles found a 28% difference in relation to Catholic fertility.¹⁵ While slightly modifying the data used by this author, we used them as they appear in Columns 1 and 2 in Table 6.24. The ratios appearing in Column 3 (as in Columns 6 and 9) facilitate the comparison between the two religions. Columns 4, 5 and 6 refer to the survivors of the women studied by Charles and it will be noted that there is very little difference in data provided by the two censuses. On the other hand, the two last columns refer to women who are twenty years younger. The ratios have roughly the same value, except in the case of urban women who have had a post-secondary education. In this instance, Catholic women more closely approximate Protestant women, the difference being only 18%. It will also be noted that the relative difference is slightly higher for rural than for urban women. But what must essentially be remembered from these comparisons is that the difference in the fertility between Protestants and Catholics remains about as high amongst women between 45 to 55 years of age (in 1961) as amongst those who are twenty years older. The average of the ratios in Column 6 is 71.7; that of the ratios in Column 9 is 74.5 and would be 73.0 if account were not taken of the more educated urban women. In brief, the difference changed from 28% to 25%. This latter percentage corresponds to what we had established earlier, taking into account the husband's income and occupation.

The persistence of such a difference is remarkable and this finding is similar to findings by other authors. This difference seems to have been somewhat reduced of late and probably will continue to drop especially if

¹⁵The average number of children (standardized mean at the bottom of p. XXI in her work) is 4.50 for Catholics and 3.22 for Protestants (see Enid Charles, *op. cit.*, p. 68).

Catholics as what seems to be happening, manage to free themselves from the prohibitions against the use of most contraceptives, issued by their church. Even if these prohibitions disappear from the scene, it is not certain that the difference in fertility levels between Catholics and Protestants would vanish. This is probably not just a question of family planning methods, but also a philosophy of life that will long remain influenced by religious affiliation.

5. PERIOD FERTILITY BY ETHNIC ORIGIN, MOTHER TONGUE AND RELIGION

By period fertility we mean the fertility rate of a given year, in contrast to the fertility of cohorts. The latter represents the number of children born, during several years, to women whose fertility is measured over a period of time. The vital and census statistics enable us to calculate these period fertility rates, by ethnic origin, for the years 1931, 1941 and 1951. As the ethnic origin of parents was dropped from birth registrations, from 1952 onwards, these rates cannot be calculated after 1951.¹⁶ However, census data do provide some measure of legitimate fertility which are related to the customary period fertility rates. By establishing the ratio of the number of children under five years of age living with their families to the number of married women, some measure of the fertility in the five years prior to the census can be worked out. This measure differs from the annual legitimate fertility rates in at least four respects:

1. Account is taken of births occurring in a five- rather than a one-year period.
2. No account is taken of deceased children or of children not living with their families.
3. The age of the mother taken at the time of the census is not the age of the mother at the time her children were born.
4. All the women married at the time the census was taken were not necessarily married during the five years prior to the census.

¹⁶Some provinces, at any rate, no longer collect this information. In any event, DBS has not classified births by ethnic origin since 1952.

Table 6.25 - Legitimate fertility rates by age group and by ethnic origin of woman, Canada,^a
1931, 1941, and 1951

(Rate per 1,000 married women)

Ethnic origin	1931				1941				1951			
	15-19 years	20-24 years	25-34 years	35-44 years	15-19 years	20-24 years	25-34 years	35-44 years	15-19 years	20-24 years	25-34 years	35-44 years
All origins	484	357	218	89	449	337	195	69	496	349	208	71
British	507	319	169	59	436	296	160	45	477	303	177	53
English	527	319	165	56	423	281	150	41	-	-	-	-
Irish	480	323	181	67	461	331	176	53	-	-	-	-
Scottish	479	319	169	60	456	308	169	47	-	-	-	-
Chinese	554	436	272	138	405	415	247	84	606	396	241	161
Japanese									571	291	187	66
Dutch	371	266	168	67	422	324	196	70	516	389	237	85
French	546	466	331	170	524	445	292	129	538	423	266	112
German	508	367	215	93	456	314	178	64	422	334	191	61
Hungarian	514	336	198	91	335	300	117	43	361	341	165	37
Italian	421	327	206	98	381	280	146	41	393	304	180	53
Jewish	219	215	126	28	181	185	127	21	234	258	192	45
Polish	352	273	194	77	393	276	131	51	409	302	183	48
Russian	217	206	164	88	333	305	157	69	388	286	157	43
Scandinavian	450	317	181	75	434	314	177	54	527	346	183	56
Ukrainian	421	348	229	101	358	293	148	59	411	302	163	42

^a Except Newfoundland, Yukon and the Northwest Territories.

SOURCE: DBS, *Census of Canada and Vital Statistics*, different years.

Only the second and fourth points may substantially invalidate the comparisons between different groups of women. The error that may arise from mortality is negligible, except among certain groups where the death rate markedly differs from the death rate in other groups. The same cannot be said of the duration of marriage. The number of children, under five years of age, per 1,000 women was calculated on the basis of ethnic origin, mother tongue and religious affiliation of the woman, by five-year age groups and by residence. Only women living with their husbands were taken into consideration and this eliminates the possibilities of error arising from placing some children outside their family of origin.

VARIATIONS BY ETHNIC ORIGIN

We shall only make a few observations on legitimate fertility rates for the years 1931, 1941 and 1951 (Table 6.25). In regard to these three years, the French and Chinese are remarkable by reason of their high fertility. This was probably not true of the Japanese, whose fertility rates, in 1951, were rather poor, except in the 15-19 age group. The Dutch equally registered a high fertility in 1951. The Jewish women stand out, as usual, by reason of their low fertility. In 1931, the Russians under 25 years had an even lower fertility rate than the Jewesses who, customarily, have lower fertility rates than those of the Canadian population as a whole. This is pretty well true of women under 25 years of age for most populations of European origin. Generally speaking, the differences in absolute fertility rates between ethnic groups tend to decrease with advancing age, while relative differences tend to increase.

Before examining the ratios of children under five years of age to married women, it is important to examine one problem which affects the interpretation of this type of rate. Women married at the time the census is taken were not all married during the five years preceding the census, so that the number of their children under five years of age is affected not only by the intensity of their fertility, but also by the number of years they have lived in the married state. This latter factor plays a particularly important part in so far as the first two age groups are concerned.

The different ethnic groups which appear in Table 6.26 and Graph 6.17 present the following order (from the highest to the lowest fertility): Indian, Eskimo, French, Irish, Asiatic, British, other north-western European origin, Jewish. In the metropolitan areas, only the Indians and Jews behave somewhat differently than other groups. However, in both rural areas (farm and non-farm) the French are marked by a quite appreciable excess fertility. Attention should also be drawn to the very particular shape of the Eskimo fertility curve. According to the index used, the

women in this group, who live more particularly in the rural non-farm environment, would have the lowest fertility up to the age of thirty, but as this fertility declines very gradually with age, they shift into a position more closely approximating that of the Indian women, whose fertility they exceed once they reach the 45-49 years level. What is particularly striking is the fertility gap between the Eskimo and the Indians. It is possible that, as other authors have pointed out, the prolonged lactation period for children is a factor markedly reducing the fertility of Eskimo women.

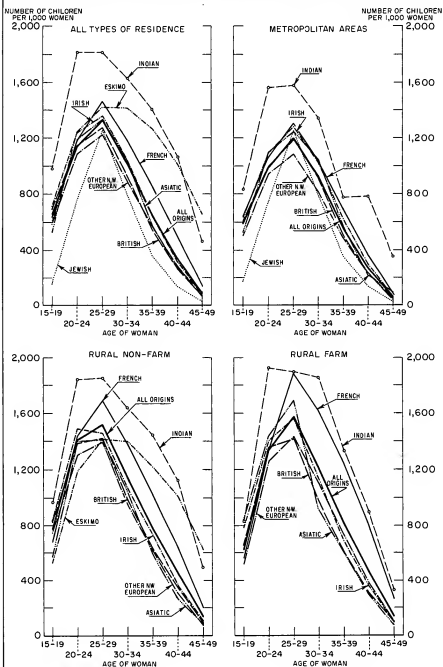
Table 6.26 – Number of children under five years per 1,000 women living with their husband, by age and ethnic origin of wife, Conodo, for various types of residence, 1961

Residence and ethnic origin	Age of woman (in years)						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
All types of residence							
British	693	1,146	1,278	932	548	266	66
French	639	1,188	1,465	1,186	854	498	143
Irish	713	1,239	1,359	1,042	646	320	76
Jewish	156	760	1,256	800	363	141	27
Other north-western European ...	587	1,087	1,222	901	571	283	66
Asiatic	613	1,190	1,333	1,030	573	270	92
Eskimo	529	1,243	1,418	1,412	1,266	1,012	658
Indian	980	1,817	1,817	1,632	1,405	1,066	465
Metropolitan areas							
British	605	995	1,190	913	509	232	50
French	647	1,062	1,308	1,035	696	367	87
Irish	636	1,090	1,281	1,022	621	300	62
Jewish	171	747	1,252	786	357	140	28
Other north-western European ...	503	942	1,082	809	492	232	41
Asiatic	529	1,092	1,249	1,039	570	215	96
Indian	833	1,562	1,578	1,341	778	788	360
Rural non-farm							
British	823	1,386	1,419	992	629	345	92
French	678	1,438	1,692	1,379	1,021	639	200
Irish	833	1,486	1,457	1,073	731	360	109
Other north-western European ...	744	1,302	1,392	960	612	308	81
Asiatic	571	1,398	1,408	1,048	588	262	88
Eskimo	529	1,194	1,412	1,395	1,218	1,007	620
Indian	970	1,833	1,850	1,639	1,445	1,127	497
Rural farm							
British	652	1,356	1,415	980	604	306	101
French	563	1,343	1,882	1,614	1,239	805	264
Irish	785	1,404	1,565	1,139	688	360	94
Other north-western European ...	520	1,259	1,435	1,100	734	379	97
Asiatic	846	1,438	1,693	913	601	297	81
Indian	833	1,925	1,900	1,855	1,333	900	333

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

GRAPH 6.17

NUMBER OF CHILDREN UNDER FIVE YEARS PER 1,000 WOMEN LIVING WITH THEIR HUSBAND, BY AGE AND ETHNIC ORIGIN OF WIFE, CANADA, FOR VARIOUS TYPES OF RESIDENCE, 1961



VARIATIONS BY MOTHER TONGUE

Table 6.27 and Graph 6.18 provide the same type of data for the three linguistic groups: English, French and others. The ranking of these three groups is not the same for all types of residence. In the urban areas, the order is French, English and others. In rural areas, the fertility of the other language groups exceeds that of the English beyond the ages of 25 or 30. The excess fertility of the French should also be noted as being higher in the rural environment (on farms, particularly) than in metropolitan areas, as we have already noted in other fertility measures.

Table 6.27 – Number of children under five years per 1,000 women living with their husband, by age and mother tongue of wife, Canada, for various types of residence, 1961

Residence and mother tongue	Age of woman (in years)						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
All types of residence							
English.....	690	1,170	1,302	954	570	275	69
French	620	1,168	1,465	1,195	865	508	144
Other.....	549	1,016	1,178	912	578	318	86
All mother tongues	656	1,145	1,325	1,013	646	341	91
Metropolitan areas							
English.....	611	1,011	1,211	932	528	242	52
French	627	1,049	1,303	1,036	699	372	88
Other.....	437	851	1,039	798	482	219	51
All mother tongues	589	989	1,198	930	557	269	60
Rural non-farm							
English.....	821	1,419	1,429	1,006	651	345	99
French	659	1,412	1,720	1,414	1,042	655	200
Other.....	728	1,361	1,504	1,203	833	558	196
All mother tongues	775	1,409	1,518	1,145	778	454	137
Rural farm							
English.....	664	1,372	1,467	1,023	642	323	97
French	538	1,325	1,903	1,637	1,263	824	269
Other.....	540	1,272	1,418	1,121	734	408	110
All mother tongues	620	1,340	1,572	1,208	821	468	144

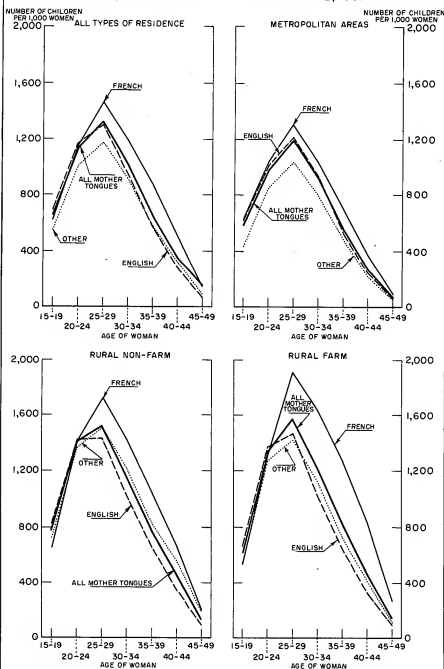
SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

VARIATIONS BY RELIGIOUS AFFILIATION

Generally speaking, it is among the Catholics that we find the highest number of children under five years of age per 1,000 women (Table 6.28 and

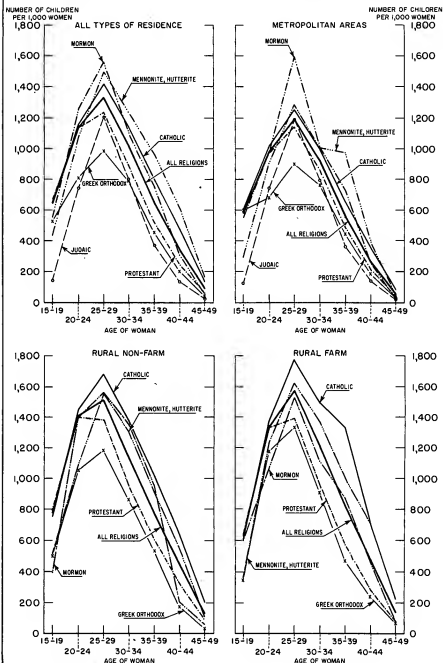
GRAPH 6.18

NUMBER OF CHILDREN UNDER FIVE YEARS PER 1,000 WOMEN
LIVING WITH THEIR HUSBAND, BY AGE AND MOTHER TONGUE OF WIFE,
CANADA, FOR VARIOUS TYPES OF RESIDENCE, 1961



Source: Table 6.27

NUMBER OF CHILDREN UNDER FIVE YEARS PER 1,000 WOMEN
LIVING WITH THEIR HUSBAND, BY AGE AND RELIGION OF WIFE,
CANADA, FOR VARIOUS TYPES OF RESIDENCE, 1961



Graph 6.19). This religious group is surpassed, however, in metropolitan areas by the Mormons, Hutterites and Mennonites aged between 25 and 45. The following is the general order: Catholics, Hutterites and Mennonites, Mormons, Protestants, Greek Orthodox and Jews. It should be pointed out, however, that in metropolitan areas, Greek Orthodox women have fewer children in the 0-4 age group than do Judaic women between 20 and 35 years of age.

Table 6.28 – Number of children under five years per 1,000 women living with their husband, by age and religion of wife, Canada, for various types of residence, 1961

Residence and religion	Age of woman (in years)						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
All types of residence							
Catholic	648	1,167	1,415	1,141	800	471	132
Greek Orthodox	530	810	989	793	457	203	45
Protestant	676	1,144	1,240	893	521	246	62
Hutterite and Mennonite	431	1,089	1,494	1,233	967	619	169
Mormon	553	1,261	1,561	1,109	757	314	56
Judaic	148	748	1,207	802	370	137	26
Metropolitan areas							
Catholic	602	1,024	1,258	1,000	656	351	83
Greek Orthodox	597	681	903	766	441	188	37
Protestant	596	976	1,142	867	484	216	46
Hutterite and Mennonite	294	910	1,285	1,005	974	392	46
Mormon	556	988	1,593	1,011	729	263	28
Judaic	127	749	1,197	794	363	138	26
Rural non-farm							
Catholic	756	1,453	1,689	1,374	1,018	639	204
Greek Orthodox	500	1,056	1,185	867	532	176	35
Protestant	795	1,397	1,381	957	605	325	96
Hutterite and Mennonite	520	1,087	1,552	1,307	914	558	114
Mormon	375	1,400	1,564	1,357	951	206	65
Rural farm							
Catholic	601	1,373	1,772	1,495	1,131	715	222
Greek Orthodox	348	1,171	1,333	915	474	242	71
Protestant	642	1,339	1,392	962	575	288	85
Hutterite and Mennonite	364	1,235	1,622	1,377	1,003	707	227
Mormon	600	1,071	1,531	1,116	873	462	76

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

Chapter 7

VARIATIONS IN FERTILITY BY HUSBAND'S OCCUPATION

It has long been noted that the social status of couples has a bearing on their fertility. Generally speaking, the higher their standing, the lower their fertility. But this relation is much more complex than would appear at first glance due to the fact that social status is in itself a conglomerate of elements, each of which may have very different effects on fertility. Some such elements are income, education, occupation, all of which are related to an outlook, goals and stresses that differ greatly from case to case – and this by no means exhausts the list of constitutive elements of social status. On the other hand, examining each constitutive element on its own does not necessarily mean that it is possible to establish a simple relation between fertility and the variations in this one constitutive element. An increase in income, for instance, brings on an increase in the consumption of most goods and services – generally speaking. The logical conclusion might therefore be that the “consumption of children” increases with income, at least when the other factors remain constant. However, the situation is more complex than this, for an increase in income opens the way to new consumption patterns that may compete with the consumption of children. So the question is not a simple one to answer.

How does fertility vary in relation to the main constitutive elements of social status? Amongst the observable characteristics, the husband's occupation is one of the most important: it is closely related to education and income, but in our analysis, we shall attempt to assess the more particular influence exercised by the husband's occupation while keeping as constants his income on the one hand, and the wife's education on the other. Residence is also related to the husband's occupation and we shall attempt to take this factor into account as well. Finally, we shall examine whether changes in fertility by husband's occupation are similar for specific segments of the Canadian population, segments defined by certain characteristics of married women, namely whether the women are immigrants, or Canadian-born of Anglo-Protestant, Anglo-Catholic or French-Catholic origin.

TRENDS AND FACTORS OF FERTILITY IN CANADA

Using the husband's occupation as listed by the census confronts the researcher with two major difficulties. First of all, certain occupational groups are extremely heterogeneous and mean little from the point of view with which we are here concerned. This is the case for a number of major occupational categories: managerial, professional and technical, transport and communication are cases in point. For example, this latter category

Table 7.1 – List of occupational groups used

Main categories		Sub-categories used
Name	Used (U) or not used (NU)	
1. Managerial occupations.....	U	None
2. Professional and technical occupations.....	U	2.1 Engineers 2.2 Physical scientists ^a 2.3 Professors ^b and college principals 2.4 Physicians and surgeons 2.5 Lawyers and notaries 2.6 Authors, editors and journalists
3. Clerical occupations	U	None
4. Sales occupations	NU	4.1 Commercial travellers 4.2 Salesclerks 4.3 Insurance salesmen and agents
5. Service and recreation occupations.....	NU	5.1 Protective services ^c 5.2 Stewards, barmen, waiters
6. Farmers and farm workers....	NU	6.1 Farmers and stockraisers 6.2 Farm labourers 6.3 Gardeners
7. Loggers and related workers	U	None
8. Fishermen, trappers and hunters.....	NU	8.1 Fishermen
9. Miners, quarrymen and related workers.....	U	None
10. Craftsmen ^d	U	10.1 Textile workers ^e
11. Labourers	U	None

^a Physicists, chemists, geologists, cement, detectives, guards, Armed Forces.
^e Spinners, weavers, knitters and related workers.

^b Except teachers.

^c Firemen, poli-

^d Craftsmen, production process and related workers.

includes truck drivers, postmen, merchant marine officers and radio announcers. Sub-categories can be used, of course, but then, the sub-categories must be sufficiently broad to include a number of cases which will make a valid analysis possible. These difficulties led us to choose only certain categories of occupations; in some instances, these were the broad and general groups of sufficient homogeneity to permit valid examination. However, in most instances, we also used a certain number of sub-categories. The list of occupations we made use of are given in Table 7.1. Seven of the twelve census categories are retained and for two of them, one or several sub-categories have also been used. On the other hand, some sub-categories have been used, but not the main category from which they were originally drawn. In all, we have 23 occupational groups, including 16 sub-categories. All are not of equal interest and they will not all be used in the different stages of our analysis.

The second major difficulty arising from the use of the husband's occupation lies in the fact that a person does not always remain in the same occupation: some people change occupations during their lifetime, so that the husband's occupation, as stated to the census-taker, is not always the same as the occupation exercised by the husband at the time of his children's birth. It is quite impossible to make the required corrections and to know the extent of these changes in occupation. It is true, of course, that in certain lines, there is a high degree of stability.

FERTILITY BY HUSBAND'S OCCUPATION

Amongst the 23 occupational groups we have retained, fertility varies more than from one to two, in the three age groups for which we have calculated the number of live-born children per 1,000 women living with their husband at the time of the census. These data are given in Table 7.2 where will first be found the number of live-born children, as well as an index which enables the reader to measure the relative difference of one occupation in relation to all occupations. For women aged 25-30, the extremes are 1,433 children (professors and college principals) and 3,305 children (fishermen); the lowest fertility rate deviates less from the average (-21.7%) than the highest (+80.6%). The same phenomenon is found in the other two age groups, but the same occupations are not found in the extreme positions. Amongst women aged 35-40 and those aged 45-50, those whose husband is either author, editor or journalist have the lowest fertility, namely 2,383 and 1,985 children per 1,000 women, respectively. In the latter instance, the number of children is insufficient to ensure the renewal of generations. At the other extreme are the loggers' wives: those aged from 35-40 each

Table 7.2 – Number of live-born children per 1,000 women aged 25-29, 35-39, and 45-49 living with their husband, by occupation of husband, Canada, 1961

Occupation of husband	Number of children			Index (all occupations = 100) ^a		
	25-29 years	35-39 years	45-49 years	25-29 years	35-39 years	45-49 years
1. Managerial occupations.....	2,041	2,859	2,576	111.5	103.4	102.1
2. Professional and technical occupations	1,636	2,610	2,396	89.4	94.4	95.0
2.1 Engineers	1,610	2,501	2,251	88.0	90.5	89.2
2.2 Physical scientists	1,572	2,496	2,371	85.9	90.3	94.0
2.3 Professors and college principals	1,433	2,729	2,596	78.3	98.7	102.9
2.4 Physicians and surgeons	1,692	3,088	2,646	92.5	111.7	104.9
2.5 Lawyers and notaries	1,536	2,953	2,874	83.9	106.8	113.9
2.6 Authors, editors and journalists	1,618	2,383	1,985	88.4	86.2	78.7
3. Clerical occupations	1,792	2,560	2,374	97.9	92.6	94.1
4.1 Commercial travellers	1,850	2,616	2,272	101.1	94.6	90.1
4.2 Salesclerks	1,968	2,822	2,428	107.5	102.1	96.2
4.3 Insurance salesmen and agents	1,941	2,922	2,693	106.1	105.7	106.7
5.1 Protective services	2,204	2,955	3,007	120.4	106.9	119.2
5.2 Stewards, barmen, waiters	1,956	2,785	2,475	106.9	100.8	98.1
6.1 Farmers and stockraisers	2,721	4,049	4,373	148.7	146.5	173.3
6.2 Farm labourers	2,474	3,665	4,130	135.2	132.6	163.7
6.3 Gardeners	2,251	2,997	3,257	123.0	108.4	129.1
7. Loggers and related workers	3,282	5,009	5,782	179.3	181.2	229.2
8.1 Fishermen	3,305	4,533	4,755	180.6	164.0	188.5
9. Miners, quarrymen and related workers	2,656	3,771	4,153	145.1	136.4	164.6
10. Craftsmen	2,206	3,113	3,169	120.5	112.6	125.6
10.1 Textile workers	2,110	3,453	3,481	115.3	124.9	138.0
11. Labourers	2,421	3,589	3,904	132.3	129.8	154.7

^a The fertility level used as the basis was that for all occupations listed in Table 7.1.

had 5.0 children, on the average, and those between 45-50 had 5.8. The wives of fishermen rank second with 4.5 and 4.8 children, respectively. For the three age groups, the wives of farmers and stockraisers rank third. It should be noted that, in all cases, it is one or the other of the two occupational groups most closely related to the so-called intellectual classes that provide the lowest contribution to the renewal of the population. This is more particularly true of authors, editors and journalists since, after the age of 35, the fertility of wives of professors and college principals runs pretty close to the average.

In order to better understand the over-all picture of these variations, it is useful to regroup the occupations into three classes, depending on the differences in fertility in relation to all occupations. This is exactly what has been done in Table 7.3. A fertility lower than 90% of that for all occupations is more particularly found amongst the younger women (25-29 years); in all cases, the occupation involved demands long years of preparatory studies. It seems obvious enough that the low fertility found in these occupations, when the women are young, is due to delayed marriages, as was found in Chapter 5. Only authors, editors and journalists remain in this class throughout the three age groups. In the intermediate class (the class corresponding to a fertility rate that does not differ by more than 10% from the fertility of all occupations) just about all the non-manual occupations are to be found, with the exception of the cases already mentioned and a few others, notably the wives of doctors who are in the 35-39 age group and the wives of lawyers and notaries who are in the 45-49 age group, whose fertility exceeds by more than 10% the fertility for all occupations. As far as the manual occupations are concerned, all of them, with one exception, fall into the higher category. In general, their fertility is quite a bit higher than average. The most striking feature of this occupational distribution is that differences above the average are much higher than those below the average; in other words, few occupations are characterized by a fertility much lower than average while several manual occupations exceed the average by more than 30%.

These differences in fertility are far from negligible: wives of loggers in the 35-39 age group, have borne twice as many children as have the wives of authors, editors and journalists; the difference is even more pronounced when we consider women aged 45-49; the ratio between these two extreme occupations is 1 to 2.9. However, these differences cannot be attributed solely to occupation itself, for quite a number of characteristics are associated with the husband's occupation, characteristics whose effect on fertility is far from slight—residence, income and schooling of wife, for

Table 7.3 — Classification of occupations according to the difference of their fertility to that of total occupations, Canada, for women aged 25-29, 35-39 and 45-49

Occupation of husband	Fertility lower than 90% of whole			Fertility between 90% and 110% of whole			Fertility higher than 110% of whole		
	25-29	35-39	45-49	25-29	35-39	45-49	25-29	35-39	45-49
1. Managerial occupations.....									
2. Professional and technical occupations	X				X	X	X		
2.1 Engineers	X		X		X	X			
2.2 Physical scientists	X				X	X			
2.3 Professors and college principals.....	X				X	X			
2.4 Physicians and surgeons				X		X		X	
2.5 Lawyers and notaries	X				X				X
2.6 Authors, editors and journalists	X	X	X	X	X	X			
3. Clerical occupations.....									
4.1 Commercial travellers									
4.2 Salesclerks				X	X	X			
4.3 Insurance salesmen and agents.....				X	X	X			
5.1 Protective services				X	X	X	X		X
5.2 Stewards, barmen, waiters								X	X
6.1 Farmers and stockraisers							X	X	X
6.2 Farm labourers									
6.3 Gardeners					X				
7. Loggers and related workers							X	X	X
8.1 Fishermen							X	X	X
9. Miners, quarrymen and related workers							X	X	X
10. Craftsmen							X	X	X
10.1 Textile workers							X	X	X
11. Labourers							X	X	X

SOURCE: Table 7.2.

instance. We shall attempt to establish, in successive stages, what remains of the variations in fertility by occupation, once the influence of these associated factors is set aside.

INTEROCCUPATIONAL VARIATIONS BY TYPE OF RESIDENCE

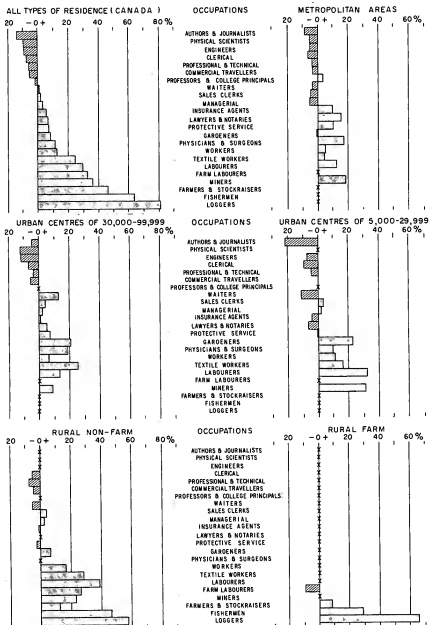
In Graph 7.1 we have shown the percentage difference between the fertility of each occupational group and the fertility of all occupations, in the case of women whose ages are between 35-40.¹ The upper left-hand panel refers to all types of residence as a whole and the occupations have been listed in increasing order of fertility (from top to bottom). It is interesting to note that although the major groups (manual and non-manual) are classified as might be expected, there are nevertheless some surprising details: professors and college principals rank close to waiters—both these occupations running very close to the average; physicians and surgeons come between gardeners and workers and finally, clerical occupations run between engineers and the professional and technical occupations.

However, what is to be primarily emphasized, in this graph, is that first of all, the differences in fertility are generally reduced when examined from within one type of residence; secondly, the order of occupations is not the same as we pass from one type of residence to another. In all the parts of Graph 7.1, the order of occupations for all types of residence has been maintained and it may be seen, thanks to the irregular pattern of the forms of each graph, that the occupational rank is no longer the same as for all types of residence as a whole. As might have been expected, in the rural type of residence, the excess fertility of the occupations in the primary sector (loggers, fishermen, farmers and farm workers) is reduced. However, it is in the rural non-farm type of residence that the excess fertility of workers and labourers is most apparent, exceeding even that of the agricultural occupations, in the case of textile workers and labourers. In the urban centres, the relative differences in relation to all occupations are relatively low, more particularly in urban centres of 30,000 to 100,000 inhabitants and in metropolitan areas. The latter type of residence deserves further consideration. Amongst the reported occupations, no fertility excess goes beyond 20%. The occupation that, following after miners, is marked by the highest fertility, is that of physicians and surgeons. The lawyers and notaries follow and only after this group do we find the labourers. The relatively high fertility of certain professional occupations is perhaps a new phenomenon, since amongst women in the 45-49 age group, for whom no data are

¹ In Appendix (Table J.3), will be found the information used in setting up this graph and similar information for the 45-49 age group.

GRAPH 7.1

**PERCENTAGE DIFFERENCE BETWEEN FERTILITY* FOR EACH OCCUPATION
(OF HUSBAND) AND FERTILITY FOR ALL OCCUPATIONS, WOMEN LIVING WITH
THEIR HUSBAND AND AGED 35 TO 40, CANADA,
FOR VARIOUS TYPES OF RESIDENCE, 1961**



Source: Table J.3

given here,² there is rather different order. Below is a listing, for this latter age group, of excess fertility in occupations where fertility is highest (metropolitan areas):

Gardeners	38%	Protective services.....	14%
Miners	38%	Insurance agents	14%
Labourers	34%	Craftsmen	12%
Lawyers and notaries	26%	Professors and college principals .	12%

Amongst women in this age group, those whose husband is either barrister or notary have a relatively high fertility in the professional occupations. The wives of doctors and surgeons had fewer children than the average for all occupations as a whole. Furthermore, the wives of labourers, aged between 45-50 had an extremely high fertility, which seems not to have been the case for women ten years younger. Obviously, it is extremely difficult to reach conclusions about the fertility of women whose fertility period is not yet completed. However, such changes as there are should be noted.

INTEROCCUPATIONAL VARIATIONS WITH CONSTANT INCOME

It goes without saying that the differences in fertility between occupations are linked with differences in income. The question may be put as to whether, by erasing the influence exercised by income, differences in fertility between occupations would remain unchanged. The problem will be examined by studying the occupations by groups and choosing, for each group, specific income levels and types of residence. These types of residence and income cannot be the same for all occupations, due to the small number of cases to be found in certain categories. Here is how we shall proceed:

- (a) in regard to the best remunerated occupations, we shall limit ourselves to the metropolitan areas and to two income levels: \$10,000 and over and \$7,000 to \$10,000;
- (b) in regard to other occupations of urban character, we shall likewise limit the scope of our study to the metropolitan areas, but shall use lower income levels: \$5,000 to \$7,000 and \$3,000 to \$5,000;
- (c) finally, in regard to occupations of rural character, comparisons will be drawn within the rural non-farm type of residence and in respect of the following two income levels: \$3,000 to \$5,000 and \$1,000 to \$3,000.

In all these cases, the women of two age groups will be examined: 35-39 years and 45-49 years.

² See in Appendix, Table J.3.

TRENDS AND FACTORS OF FERTILITY IN CANADA

Table 7.4 refers to occupations in the first group. An index will be found there, representing the fertility for each occupation in relation to fertility for all occupations. In the case of both age groups, the index is given in regard to two particular income groups and also for all incomes and this permits us to easily discover the difference in results obtained when income is taken into account. Fertility is relatively high in the case of physicians, surgeons, lawyers and notaries when their income is over \$10,000, but this excess fertility disappears or decreases in the case of those who earn between \$7,000 and \$10,000. Generally speaking, moreover, the occupations listed in Table 7.4 have a lower index when the income is low even though, in each case, the index is calculated in relation to all occupations *within the same income group*. The same phenomenon can be observed for the second group of occupations (Table 7.5), where the woman is between 35-40. In the case of women between 45-50, this phenomenon is only observed among miners and labourers, where the fertility remains relatively high in both income groups. The phenomenon in the third group of occupations (farmers, loggers, and fishermen) is exactly the opposite. In all cases, there is an excess fertility in these occupations, very

Table 7.4 - Number of live-born children per woman, for selected occupations of husband: index based on the fertility of total occupations, for selected income groups^a, for women aged 35-39 and 45-49, Canada, metropolitan areas, 1961

Occupation of husband	35-39 years			45-49 years		
	\$10,000 and over	\$7,000 to \$10,000	All income groups	\$10,000 and over	\$7,000 to \$10,000	All income groups
Engineers	100	93	95	96	88	98
Physical scientists.....	96	91	94	105	90	105
Professors and college principals	96	95	104	122	87	115
Physicians and surgeons	111	109	118	112	94	113
Lawyers and notaries	109	99	116	132	86	119
Authors, editors and journalists	89	102	91	86	65	82
Insurance agents	106	102	110	105	108	110
All occupations ^b	100	100	100	100	100	100
Number of live-born children per 1,000 women, all occupations	2,818	2,538	2,525	2,326	2,550	2,240

^a Income of husband.

^b This represents all occupations enumerated in Table 7.1, and not just those listed here.

SOURCE: Special table.

high in some instances in relation to the whole; but, this excess is relatively higher as income is lower, with the exception of fishermen whose wives are in the 35-40 age group.

Regardless of the variation in the fertility indices for various occupations, by income levels, the relative standing of occupations, in regard to the number of children ever born, does not greatly change. It seems obvious that if there is an interoccupational difference, it is not primarily due to variations in the income levels related to occupations. Once the effect of income and type of residence is erased, loggers and fishermen remain at the head of the list, followed by farm labourers, labourers and miners; next in line are protective services, craftsmen, and physicians and surgeons. The other occupations, including farmers and stockraisers, do not differ markedly from the average; engineers and physical scientists (physicists, chemists, geologists), authors and journalists are the occupations for which fertility is lowest, whether income is considered or not.

Table 7.5 – Number of live-born children per woman, for selected occupations of husband: index based on the fertility of total occupations, for selected income groups^a, for women aged 35-39 and 45-49, Conodo, metropolitan areas, 1961

Occupation of husband	35-39 years			45-49 years		
	\$5,000 to \$7,000	\$3,000 to \$5,000	All income groups	\$5,000 to \$7,000	\$3,000 to \$5,000	All income groups
Clerical occupations...	109	96	94	103	95	97
Commercial travellers...	100	98	97	93	94	94
Salesmen.....	110	102	96	93	99	98
Protective services....	116	118	110	118	120	117
Miners	131	—	119	158	125	147
Labourers	113	112	105	116	116	117
Textile workers	157	108	105	—	124	126
Craftsmen.....	125	124	113	142	135	138
All occupations ^b	100	100	100	100	100	100
Number of live-born children per 1,000 women, all occupations	2,426	2,330	2,525	2,200	2,261	2,240

^a Income of husband.

^b This represents all occupations listed in Table 7.1, and not just those listed here.

SOURCE: Special table.

Table 7.6 – Number of live-born children per woman, for selected occupations of husband: index based on the fertility of total occupations, for selected income groups^a, for women aged 35-39 and 45-49, Canada, rural non-farm, 1961

Occupation of husband	35 - 39 years			45 - 49 years		
	\$3,000 to \$5,000	\$1,000 to \$3,000	All income groups	\$3,000 to \$5,000	\$1,000 to \$3,000	All income groups
Farmers and stockraisers	104	120	112	105	109	109
Farm labourers.....	122	131	126	126	150	151
Loggers.....	153	169	158	140	227	195
Fishermen.....	177	147	147	166	173	163
All occupations ^b	100	100	100	100	100	100
Number of live-born children per 1,000 women, all occupations	3,391	3,236	3,294	3,224	2,915	3,015

^a Income of husband.
just those listed here.

^b This represents all occupations listed in Table 7.1, and not

SOURCE: Special table.

POSSIBLE INFLUENCE OF WOMAN'S SCHOOLING

We attempted to establish whether or not the wife's schooling could explain an appreciable fraction in the interoccupational variations of fertility. By maintaining constant the husband's income and type of residence, and by retaining only couples where the wife has had secondary schooling, we get the following results: in the occupational groups where, generally speaking, the wife is a well-educated woman, the fact of limiting the selection to couples where the wife has had secondary schooling increases fertility: this tends to raise the relative position of these occupations in the classification. This is particularly so in the case of physicians and surgeons, and professors and college principals. On the other hand, the fact of taking only those couples where the wife has had high school training does somewhat reduce the fertility of occupations that, generally speaking, are associated with low educational standing (salesclerks, craftsmen). This is the result of a familiar phenomenon which is to be studied in a later chapter. The fertility rate varies inversely to schooling. It is difficult to define exactly to what extent the consideration of the wife's schooling changes the relative position of the occupational groups, in regard to fertility. Any systematic study of the subject becomes extremely difficult because a classification of the couples by occupation,

type of residence, age and schooling of wife, and husband's income, contains a great many categories which are insufficiently represented for the fertility rate to have any significant value. The only conclusion to be drawn from this analysis is that, apparently, physicians and surgeons, professors and college principals are characterized by relatively high fertility in relation to all occupations as a whole whereas the fertility of salesclerks is relatively low.

PARTICULAR CULTURAL GROUPS

Fertility variations by husband's occupation as just shown, prevail equally in regard to each of the major cultural groups comprising the Canadian population: immigrants, Anglo-Protestants, Anglo-Catholics and French-Catholics.³ In Table 7.7 will be found the number of live-born children per 1,000 women living with their husband for some of the more important professional groups. This information is provided for women in two age groups (35-39 and 45-49), for all types of residence as a whole and for metropolitan areas (except in the case of farmers and stockraisers whose particular type of residence is the rural farm environment). Table 7.8 translates the same information into an index (all occupations = 100).

As a whole, the variations in the index are about the same for all groups. Among the six occupational groups studied here, the lowest index corresponds to clerical occupations, except in the case of French-Catholics aged 35-39 living in metropolitan areas. Next in rank come the professional and technical occupations, then either craftsmen or occupations related to protective services. The labourers clearly surpass the two latter groups, but are in turn surpassed by farmers and stockraisers.

Let us now compare the four groups with one another. For all types of residence as a whole, the two English-speaking groups, whether Protestant or Catholic, are characterized by the lowest amplitude in variations; the French-speaking Catholics, on the other hand, are the group for which the relative differences are highest, due more particularly to the high fertility of farmers and stockraisers, for whom the index reaches 168 for women in the 35-39 age group and 186 for women in the 45-49 age group. The Anglo-Protestants are distinguished from the other groups by a much higher fertility amongst the labourers than amongst farmers and stockraisers, for women in both age groups. Immigrants usually occupy an intermediate position between English- and French-speaking women. In metropolitan areas, the interoccupational differences are lower and the various

³ These groups are defined solely by the woman's characteristics. The three latter groups include only women born in Canada.

Table 7.7 – Number of live-born children per 1,000 women living with their husband, by occupation of husband, for four selected sub-populations, Canada, 1961

(Women aged 35-39 and 45-49, all types of residence and metropolitan areas^a)

Occupation of husband	All types of residence					Metropolitan areas ^a				
	Immigrants	Anglo-Protestants	Anglo-Catholics	French-Catholics	Canadian population	Immigrants	Anglo-Protestants	Anglo-Catholics	French-Catholics	Canadian population
Women aged 35-39										
Professional and technical occupations	2,286	2,597	3,019	3,014	2,610	2,130	2,503	2,818	2,675	2,439
Clerical occupations.....	2,212	2,376	2,956	3,001	2,560	2,032	2,250	2,804	2,726	2,370
Protective services.....	2,723	2,778	3,399	3,431	2,955	2,611	2,594	3,288	3,111	2,782
Craftsmen	2,430	2,885	3,620	3,893	3,113	2,192	2,573	3,159	3,265	2,658
Labourers	2,709	3,502	4,191	4,430	3,589	2,488	2,806	3,345	3,487	2,849
Farmers and stockraisers.....	3,442	3,198	4,354	5,713	4,049	3,477 ^a	3,208 ^a	4,395 ^a	5,747 ^a	4,087 ^a
All occupations:										
All types of residence or metropolitan areas.....	2,404	2,610	3,198	3,406	2,764	2,244	2,476	2,955	2,919	2,525
Rural farm environment.....	—	—	—	—	—	3,333 ^a	3,092 ^a	5,200 ^a	5,750 ^a	3,753 ^a
Women aged 45-49										
Professional and technical occupations	2,176	2,114	2,949	3,304	2,396	2,070	2,027	2,566	2,977	2,246
Clerical occupations.....	2,019	2,106	2,685	3,006	2,374	1,961	1,923	2,478	2,647	2,182
Protective services.....	2,369	2,572	3,644	3,828	3,007	2,273	2,257	3,131	3,160	2,614
Craftsmen	2,473	2,714	3,593	4,162	3,169	2,265	2,291	2,976	3,289	2,613
Labourers	3,044	3,365	4,075	4,952	3,904	2,838	2,398	3,557	3,826	3,098
Farmers and stockraisers.....	3,723	3,049	4,639	6,890	4,373	3,759 ^a	3,101 ^a	4,690 ^a	6,974 ^a	4,451 ^a
All occupations:										
All types of residence or metropolitan areas.....	2,202	2,167	2,928	3,714	2,523	2,070	1,995	2,601	3,042	2,240
Rural farm environment.....	—	—	—	—	—	3,897 ^a	3,387 ^a	4,059 ^a	6,321 ^a	4,249 ^a

^a For farmers and stockraisers, the type of residence is rural farm, and not metropolitan areas.

SOURCE: Special table.

Table 7.8 – Fertility^a index of women living with their husbands, by occupation of husband (total occupations = 100), for four selected sub-populations, Canada, 1961

(Women aged 35-39 and 45-49, all types of residence and metropolitan areas^b)

Occupation of husband	All types of residence					Metropolitan areas ^b				
	Immigrants	Anglo-Protestants	Anglo-Catholics	French-Catholics	Canadian population	Immigrants	Anglo-Protestants	Anglo-Catholics	French-Catholics	Canadian population
Women aged 35-39										
Professional and technical occupations	95	100	94	88	94	95	101	95	92	97
Clerical occupations	92	91	92	88	93	91	91	95	93	94
Protective services	113	106	106	101	107	116	105	111	107	110
Craftsmen	101	111	113	114	113	98	104	107	112	105
Labourers	113	134	131	130	130	111	113	113	119	113
Farmers and stockraisers	143	123	136	168	146	104 ^b	104 ^b	85 ^b	100 ^b	109 ^b
All occupations	100	100	100	100	100	100	100	100	100	100
Women aged 45-49										
Professional and technical occupations	99	98	101	89	95	100	102	99	98	100
Clerical occupations	92	97	92	81	94	95	96	95	87	97
Protective services	107	119	124	103	119	110	113	120	104	117
Craftsmen	112	125	123	112	126	109	115	114	108	117
Labourers	138	155	139	133	155	137	120	137	126	138
Farmers and stockraisers	169	141	158	186	173	96 ^b	92 ^b	116 ^b	110 ^b	105 ^b
All occupations	100	100	100	100	100	100	100	100	100	100

^a Number of live-born children per woman.

^b For farmers and stockraisers, the type of residence is rural farm, and not metropolitan areas. In this regard, the index is calculated in relation to all occupations as a whole in the rural farm environment.

SOURCE: Table 7.7.

cultural groups manifest rather similar series of indices. The same holds true of the index for farmers and stockraisers, in relation to the general fertility level in the rural farm environment.

The different stages in this analysis indicate clearly that the husband's occupation is linked with major variations in fertility even when we suppress the possible influence of certain other factors associated with occupation such as type of residence, income, or the wife's schooling. We have not sought to erase the influence of the husband's schooling and it would have been difficult to do so systematically, due to the close tie between occupation and schooling. However, some occupations that we have studied do correspond to similar levels of educational attainment; yet, noteworthy differences in fertility indices persist. Thus, regardless of income, type of residence and the husband's or wife's schooling, occupation plays a role. But what is meant by occupation? What are the basic elements corresponding to a certain occupation that go towards creating a framework that is favourable or unfavourable to fertility? The scope of our study does not permit us to formulate an answer to this question. But, even though we may not be able to identify the elements implied by the term "occupation", the fact remains that such elements do exist.

Chapter 8

FERTILITY VARIATIONS BY LEVEL OF SCHOOLING

In most, if not all, modern societies whose fertility has been studied, an inverse ratio has been found between schooling and fertility. Canada is no exception to this rule, and later in the course of this study it will be shown that fertility variations in relation to schooling are quite marked, even when the influence of other associated characteristics such as income or occupation are erased from the picture. One may think that the effect of schooling level on the behaviour of couples in regard to the number of their children is quite indirect, and the amount of education an individual has had is probably an index of a certain number of psycho-sociological factors which bear directly on fertility. In other words, only in rare instances will the school be the centre where a person hears explicit counsel or information concerning the number of children he should have. Even if, on occasion, the problem is discussed, it is more likely that the effect of schooling bears much less directly and more diffusely on the fertility. By what circuitous paths then, does scholastic attainment reduce, on average, the fertility of couples? The following hypotheses may be formulated:

1. Schooling probably develops a more rational outlook, an outlook of planning the future in so far as determining the life of each individual. There cannot be any doubt but that the number and quality of children within a family do constitute a most important element in determining what these living conditions will be.
2. Schooling also leads to a certain self-liberation of the individual from nature, inherited traditions and religious values, at least inasmuch as the latter imply moral precepts which are likely to influence family size.
3. The more direct influence of schooling seems to be the stimulation of needs that are more difficult to satisfy where there are a lot of

children in the family. This conflict arises between the quantity and quality of the children, or, to be more exact, the number of children and the care to be given to each child. But there are factors external to the marriage which influence family planning as well: schooling creates and encourages needs of all kinds which take time, energy and resources to meet — time, energy and resources that can no longer be devoted to educating children. Obviously, it is with the woman that this type of conflict weighs most.

4. Finally, access to knowledge about contraceptives is certain to be much easier for a person who has been educated over a longer period of time, and probably the better educated the person, the more effective the techniques that person uses.

Before examining the fertility variations by level of schooling, we shall examine the distribution of women in this regard. Table 8.1 shows the percentage distribution of women ever married between 15-65, for each type of residence, by level of schooling. For all types of residence, a little

Table 8.1 — Percentage distribution of women ever married, aged 15-64, for every type of residence by schooling of woman, Canada, 1961

Type of residence	Absolute figures (in '000)	Percentage distribution				Total
		Elementary	Secondary	Some university	University degree	
All types of residence	3,796	42.2	53.4	2.8	1.6	100.0
Urban.....	2,770	38.3	56.7	3.0	2.0	100.0
Rural non-farm ...	645	51.0	46.1	2.2	0.7	100.0
Rural farm.....	381	55.8	41.5	2.3	0.4	100.0

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

more than two fifths of the women have not gone beyond the elementary school level, a little more than half have had at least partial high schooling, and only 4.4% have been to university. Slightly more than a third of the 4.4% are university graduates. As may be expected, there is a higher proportion of women who have had either high schooling or university training among the urban than among the rural women, and among rural women, those from a non-farm environment have had more high schooling and university training than have those on farms. The percentage of university graduates is five times higher (2.0%) among urban women than in the farm environment (0.4%). Table 8.2 provides the percentage distribution of these women for each schooling level by type of residence. The higher the schooling level, the more highly urbanized are the women. There is very little difference

Table 8.2 – Percentage distribution of women ever married, aged 15-64, for each level of schooling, Canada, by type of residence, 1961

Schooling level	Absolute figures (in '000)	Percentage distribution			
		Urban	Rural non-farm	Rural farm	All types of residence
All levels.....	3,796	73.0	17.0	10.0	100.0
Elementary.....	1,603	66.2	20.5	13.3	100.0
Secondary.....	2,026	77.5	14.7	7.8	100.0
Some university.....	106	78.6	13.2	8.2	100.0
University degree.....	61	89.7	7.4	2.9	100.0

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

between the secondary and "some university" levels. It should be noted that nine out of ten university graduates live in urban areas while only 3% live on a farm.

In a first section of this chapter, we shall examine the differences in fertility by schooling level for each type of residence: number of live-born children, distribution of women ever married by number of children and parity-progression ratios. The second part will deal with a study of the specific role of schooling, that is to say with variations in fertility by schooling, when other important factors affecting fertility remain constant. Finally, in a third section, our results will be compared with those of Enid Charles and with the situation in the United States.

1. FERTILITY OF WOMEN BY LEVEL OF SCHOOLING

NUMBER OF LIVE-BORN CHILDREN

For all types of residence, fertility is lower as schooling is higher (Table 8.3 and Graph 8.1). The following facts should be noted:

1. It is between the elementary and secondary levels that the differences are most pronounced. The differences are appreciable between the secondary and university levels (except in the case of urban women under 30), but there is very little difference between women who have attended university, but not graduated and those who graduated, with the exception of rural women over 50.
2. Differences in fertility between various levels of schooling decrease as we go from the farm environment to the rural non-farm

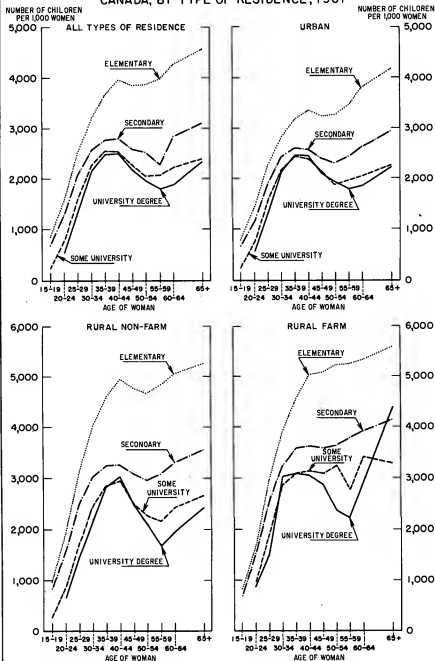
Table 8.3 - Number of live-born children per 1,000 women ever married, by age and by schooling of woman, Canada, by type of residence, 1961

Type of residence and schooling	Age of women (in years)										
	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65+
All types of residence											
Elementary	840	1,576	2,527	3,207	3,678	3,962	3,844	3,859	3,985	4,255	4,545
Secondary	693	1,266	2,066	2,572	2,777	2,785	2,594	2,519	2,260	2,831	3,106
Some university	233	776	1,606	2,260	2,548	2,523	2,268	2,046	2,064	2,219	2,381
University degree	—	553	1,326	2,157	2,498	2,506	2,163	1,942	1,795	1,887	2,337
Urban											
Elementary	770	1,432	2,256	2,818	3,187	3,357	3,233	3,273	3,452	3,805	4,170
Secondary	654	1,167	1,929	2,418	2,605	2,583	2,379	2,300	2,435	2,620	2,935
Some university	242	749	1,558	2,170	2,439	2,387	2,130	1,851	1,947	2,035	2,252
University degree	—	540	1,314	2,136	2,455	2,442	2,109	1,909	1,788	1,823	2,217
Cities of 100,000+											
Elementary	709	1,309	2,063	2,542	2,861	2,995	2,860	2,918	3,102	3,432	3,864
Secondary	619	1,082	1,800	2,279	2,457	2,425	2,194	2,134	2,302	2,453	2,822
Some university	185	707	1,479	2,095	2,314	2,285	2,017	1,737	1,825	1,946	2,275
University degree	—	547	1,261	2,063	2,399	2,356	2,062	1,851	1,774	1,740	2,222
Rural non-farm											
Elementary	971	1,930	3,131	4,037	4,598	4,948	4,758	4,672	4,824	5,042	5,242
Secondary	824	1,575	2,501	3,030	3,254	3,286	3,081	2,951	3,092	3,312	3,540
Some university	250	841	1,754	2,489	2,853	2,954	2,509	2,250	2,174	2,432	2,658
University degree	—	659	1,441	2,174	2,830	3,018	2,490	2,094	1,683	1,977	2,416
Rural farm											
Elementary	820	1,665	2,987	3,907	4,557	5,024	5,082	5,218	5,241	5,314	5,590
Secondary	673	1,517	2,544	3,229	3,588	3,613	3,575	3,615	3,782	3,912	4,128
Some university	—	979	1,916	2,858	3,096	3,125	3,088	3,243	2,741	3,412	3,298
University degree	—	857	1,500	3,020	3,098	3,046	2,885	2,350	2,205	2,900	4,395

SOURCE: DBS, *Census of Canada, 1961*, Bulletin 4.1-8, Table H3.

GRAPH 8.1

NUMBER OF LIVE-BORN CHILDREN PER 1,000 WOMEN EVER MARRIED,
BY AGE AND BY SCHOOLING OF WOMAN,
CANADA, BY TYPE OF RESIDENCE, 1961



and to the city. This is due to the following phenomenon: the fertility level is relatively stable from one type of residence to another, among women who have been to university; whereas the fertility of women who have not gone beyond the elementary school level responds a good deal more to the type of residence: their fertility is much higher in the country than it is in urban areas.

3. Between women who, in 1961, were between 55-60, and those who were around 40, there was a progressive recovery in the fertility of women who had been to university. In the case of women university graduates, the number of live-born children per woman was 40% higher amongst women in the 35-39 age group than amongst those in the 55-59 age group in so far as the rural farm environment was concerned; this increase was of the order of 68% in the rural non-farm environment, 37% for all urban areas and 35% in cities of more than 100,000 inhabitants. This recovery is less marked among women who had a secondary school education and even lower among women who did not progress beyond the elementary school level.
4. Finally, as we have already noted in regard to several other factors, the differences between the different levels of schooling are higher, generally speaking, amongst older than amongst younger women. This phenomenon will be systematically measured in our study.

In Table 8.4 are reported the relative differences in fertility between women who are university graduates and those who have elementary schooling, for each age group and type of residence. The relative difference in fertility decreases regularly as we pass from the 60-64 age group to the 35-39 age group (from 56% to 32% for all types of residence) then increases for younger women. Indeed the highest figure corresponds to the 20-24 age group (65%). This pattern is common to all types of residence. The differences in fertility from one schooling level to another are lower in the larger cities than for urban areas as a whole, and again are lower in the latter than in the rural farm environment. There seems, therefore, to be a very generalized erosion of behaviour differences by schooling, in so far as fertility is concerned. Should we therefore conclude that schooling tends to lose its importance in determining fertility levels? This is not a conclusion to be too hastily reached; further examination of the problem will indicate that this is probably not the case at all. If the differences we have just examined tend to decrease as age decreases, this is because other factors that go hand in hand with variations in schooling, also tend to produce the same effect.

Table 8.4 – Percentage^a differences between the fertility^b of women with a degree and that of women with elementary schooling, by age of woman, Canada, by type of residence, 1961

Age of woman	Type of residence				
	Cities of 100,000+	Urban ^c	Rural non-farm	Rural farm	All types of residence
15-19 years	—	—	—	—	—
20-24 "	58.2	62.3	65.9	48.5	64.9
25-29 "	38.9	41.8	54.0	49.8	47.5
30-34 "	18.8	24.2	46.1	22.7	32.7
35-39 "	16.1	23.0	38.5	32.0	32.1
40-44 "	21.3	27.3	39.0	39.4	36.8
45-49 "	27.9	34.8	47.7	43.2	43.7
50-54 "	36.6	41.7	55.2	55.0	49.7
55-59 "	42.8	48.2	65.1	57.9	55.0
60-64 "	49.3	52.1	60.8	45.4	55.7
65 years and over	42.5	46.8	53.9	21.4	48.6

^a In relation to fertility of women with elementary schooling.
children per woman.

^b Number of live-born

^c Includes cities of over 100,000 inhabitants.

SOURCE: Table 8.3.

DISTRIBUTION BY NUMBER OF CHILDREN AND PARITY-PROGRESSION RATIOS

Percentage distribution of women ever married for some age groups, according to the number of children, is given in Table 8.5, for each type of residence and by level of schooling. The observations hereunder refer to all types of residence as a whole, but may apply equally, as a general rule, to each type of residence in particular. For all levels of schooling, we note a decrease in the percentage of infertile women, as we pass from women aged over 65 to those aged between 35 and 40. This reduction is particularly remarkable in the case of women who have attended university: amongst university graduates, for instance, the percentage of women who have remained infertile is 20% at 65 and over and 13% at 35-39. At all age levels, however, the percentage of infertile women increases in proportion to schooling, and differences are quite noticeable. Similar variations and differences are also to be noted in regard to that proportion of women who have borne only one child.

Generally speaking, among the women aged 35 and over, the more educated the women, the more they are found concentrated in those categories which correspond to two or three children. For example, among women in the 35-39 age group, we find in those categories 38% of the women with elementary schooling and 48.6% of university graduates. For women aged over 65, the corresponding percentages are 26.4 and 40.2, respectively.

The relative differences, between various levels of schooling, become more appreciable in the categories with a high number of children. For women in the 45-49 age group, who will probably not bear any or very few

Table 8.5 – Percentage distribution of women ever married by number of live-born children, for selected age groups and for various levels of schooling of woman, Canada, by type of residence, 1961

Type of residence, age, and schooling	Number of children							
	0	1	2	3	4	5	6	7+
All types of residence								
20-24 years								
Elementary	19.6	33.7	26.4	13.1	5.0	1.4	0.6	0.2
Secondary	27.7	34.9	25.0	9.2	2.5	0.5	0.1	0.1
Some university	45.2	36.3	14.7	3.5	0.2	—	—	0.1
University degree	56.7	32.4	9.8	1.1	—	—	—	—
35-39 years								
Elementary	7.8	10.8	19.7	18.3	13.6	9.7	6.6	13.5
Secondary	9.7	13.4	26.3	22.3	13.7	7.0	3.5	4.1
Some university	11.5	13.0	28.0	22.9	14.1	6.1	2.4	2.0
University degree	13.1	13.0	24.0	24.6	16.7	5.5	2.0	1.1
45-49 years								
Elementary	11.1	12.4	18.0	15.2	11.6	8.3	6.4	17.0
Secondary	14.5	17.3	25.9	18.0	10.3	5.5	3.2	5.3
Some university	16.0	16.5	29.4	18.8	9.8	5.4	2.4	1.7
University degree	17.7	17.8	26.8	21.2	9.8	3.5	1.6	1.6
65 years and over								
Elementary	10.9	10.4	13.4	13.0	11.1	8.8	7.0	25.4
Secondary	16.2	15.2	19.4	15.3	10.7	7.0	5.1	11.1
Some university	19.9	17.5	22.9	16.3	9.6	6.3	2.9	4.6
University degree	20.4	18.5	23.5	16.7	8.7	5.2	2.1	4.9
Urban								
35-39 years								
Elementary	9.1	12.7	22.7	19.7	13.2	8.7	5.3	8.6
Secondary	10.5	14.6	27.6	22.3	12.9	6.2	2.9	2.9
Some university	12.0	14.3	28.3	23.3	13.1	5.5	2.0	1.5
University degree	13.3	13.4	24.4	24.7	16.0	5.6	1.7	0.9
45-49 years								
Elementary	12.9	14.8	20.4	16.0	11.5	7.6	5.4	11.4
Secondary	15.4	18.6	27.4	17.6	9.7	4.7	2.7	3.9
Some university	17.3	17.4	30.3	17.9	9.4	4.9	1.8	0.9
University degree	17.8	18.0	27.1	21.2	9.7	3.5	1.6	1.1
65 years and over								
Elementary	11.6	11.7	14.8	13.8	11.3	8.7	6.7	21.3
Secondary	16.7	16.0	20.5	15.6	10.5	6.5	4.6	9.6
Some university	20.4	18.8	23.8	15.8	9.1	5.8	2.7	3.5
University degree	20.7	18.7	24.8	17.5	7.8	4.7	1.7	4.0

FERTILITY OF WOMEN BY LEVEL OF SCHOOLING

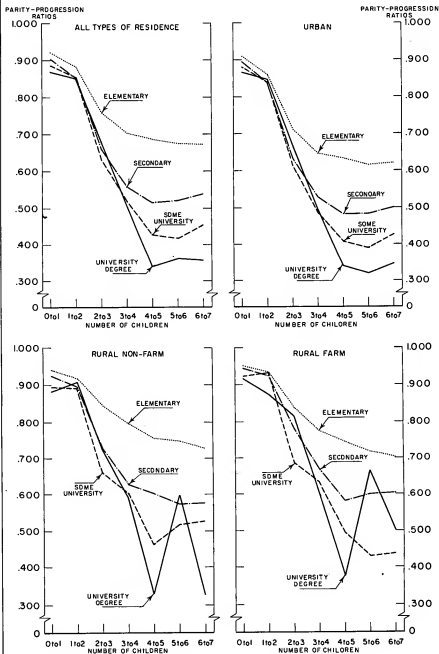
Table 8.5 – Percentage distribution of women ever married by number of live-born children, for selected age groups and for various levels of schooling of woman, Canada, by type of residence, 1961 – Concluded

Type of residence, age, and schooling	Number of children							
	0	1	2	3	4	5	6	7+
Rural non-farm								
35-39 years								
Elementary	6.0	7.6	13.5	14.8	14.2	11.0	8.9	24.0
Secondary	7.4	9.8	22.6	22.4	15.1	9.7	5.5	7.5
Some university	10.7	9.7	26.9	21.0	17.0	7.1	3.6	4.0
University degree	11.8	8.1	22.2	23.7	22.9	4.5	4.5	2.2
45-49 years								
Elementary	9.2	8.8	13.4	13.3	10.9	9.2	7.8	27.3
Secondary	12.7	14.1	21.4	18.6	11.8	7.3	4.6	9.4
Some university	12.3	14.8	29.3	22.3	9.6	4.6	4.0	3.1
University degree	17.9	15.0	27.0	20.1	10.0	2.0	3.0	4.9
65 years and over								
Elementary	10.8	8.0	10.1	11.2	9.9	9.0	7.5	33.5
Secondary	16.7	13.1	15.4	13.6	11.0	8.4	6.4	15.4
Some university	21.8	11.4	22.1	16.7	9.8	7.1	3.7	7.4
University degree	24.6	16.8	18.1	9.2	16.8	7.8	3.8	2.7
Rural farm								
35-39 years								
Elementary	4.8	6.2	14.5	16.6	14.7	12.2	9.2	21.8
Secondary	5.6	7.2	19.1	22.5	19.1	10.6	6.3	9.6
Some university	7.7	6.1	26.9	21.8	18.9	10.6	4.5	3.5
University degree	8.3	11.6	14.7	26.3	24.4	4.9	4.9	4.9
45-49 years								
Elementary	5.9	6.9	13.4	14.1	13.0	10.2	8.5	28.0
Secondary	8.9	10.3	19.3	20.3	13.4	10.5	5.4	11.9
Some university	10.0	11.5	21.9	21.9	13.5	10.8	4.6	5.8
University degree	15.4	19.2	17.3	23.1	9.6	7.7	—	7.7
65 years and over								
Elementary	6.4	6.9	10.2	11.4	11.5	9.4	8.3	35.9
Secondary	9.5	10.8	15.5	15.2	13.0	9.5	7.6	18.9
Some university	9.7	15.3	12.9	21.0	15.3	10.5	3.2	12.1
University degree	5.2	18.4	13.2	20.7	2.9	8.0	5.2	26.4

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

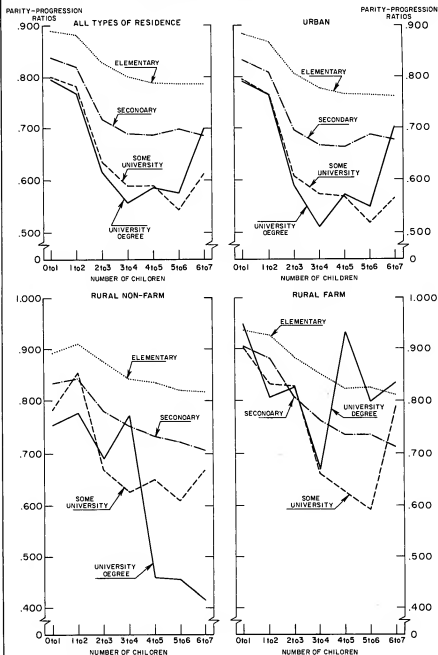
more children, 17% of the women with elementary schooling bore at least seven children; this percentage drops to 5.3% for women of high school level and to 1.7% and 1.6% for the two categories of women having attended university. The difference between women with elementary schooling and those with secondary schooling is noteworthy. This difference can also be made with regard to several aspects of fertility. Therefore, it is access to

PARITY-PROGRESSION RATIOS BY SCHOOLING OF WOMAN,
CANADA, BY TYPE OF RESIDENCE,
WOMEN EVER MARRIED AGED 35-39, 1961



Source: Table B.5

**PARITY-PROGRESSION RATIOS BY SCHOOLING OF WOMAN, CANADA,
BY TYPE OF RESIDENCE, WOMEN EVER MARRIED
AGED 65 AND OVER, 1961**



Source: Table B.5

secondary studies that more particularly brings about a reduction in fertility and more particularly leads to a decrease in large families.¹

The parity-progression ratios to be derived from these distributions have been reproduced in Graph 8.2, for women aged between 35-39, and for those aged over 65. The ratios of low order (0 to 1, and 1 to 2 children in particular) are higher in the case of women aged between 35-39 than in the cases of women over 65, but the contrary occurs for ratios of higher order. One other result should be pointed out: among younger women, the curves corresponding to the secondary level tend to be further away from those corresponding to the elementary level than in the case of older women; on the other hand, they come closer to the curves corresponding to the university level among younger than among older women. An examination of the curves leaves us with the general impression that among women over 65, each stage in the schooling process induces an appreciable reduction in fertility; whereas among younger women, it is more particularly the transition from the elementary to the secondary which leads to a marked reduction in fertility, although the effects of attending university should not be overlooked.

2. AN ATTEMPT TO MEASURE THE SPECIFIC INFLUENCE OF SCHOOLING

Variations in level of schooling go hand in hand with variations in other characteristics whose influence is effected in concert with that exercised by schooling. To attempt to measure the influence specific to schooling, we shall see how fertility (the number of live-born children) varies in relation to this specific factor, when other variables are held constant: schooling of spouse, occupation and income of husband, religion and mother tongue. We shall study successively the role played by the wife's and the husband's schooling.

WIFE'S SCHOOLING

First of all, we shall maintain constant the husband's schooling and income, that is to say, examine how fertility varies in relation to the wife's schooling. This information is given in the form of indices, in Table 8.6, for all types of residence as a whole and metropolitan areas, and for two age groups of women: 35-39 and 45-49. Only three levels of schooling of husband were considered. We left aside those cases where the sample

¹ Refer to Table 8.3 (all types of residence): for women aged 45-49, for instance, fertility is reduced by 32.5% in the passage from elementary to secondary level; this reduction represents three quarters of the reduction noted between the elementary school and the university graduate level (43.7%).

Table 8.6 – Index of fertility^a variations by schooling of woman, for selected combinations of schooling and income of husband, Canada, total areas and metropolitan areas, 1961

(Secondary level = 100)

NOTE: We ignored those cases where less than 50 couples were involved.

Schooling and annual income of husband (income in thousand dollars)	All types of residence				Metropolitan areas			
	Schooling of wife				Schooling of wife			
	Elementary	Secondary	Some university	University degree	Elementary	Secondary	Some university	University degree
A. WOMEN AGED 35-39								
Elementary								
1-3.....	125	100	—	—	112	100	—	—
3-5.....	117	100	—	—	110	100	—	—
5-7.....	119	100	—	—	111	100	—	—
7-10.....	125	100	—	—	122	100	—	—
10 +.....	130	100	—	—	112	100	—	—
Average.....	123	100	—	—	113	100	—	—
Secondary								
1-3.....	125	100	85	—	116	100	—	—
3-5.....	122	100	92	71	120	100	81	—
5-7.....	118	100	92	80	114	100	91	—
7-10.....	117	100	90	97	115	100	95	—
10 +.....	110	100	108	91	96	100	106	—
Average.....	118	100	93	85	112	100	93	—
University degree								
1-3.....	—	100	—	—	—	100	—	—
3-5.....	—	100	90	115	—	100	—	—
5-7.....	—	100	94	88	—	100	92	84
7-10.....	—	100	107	95	—	100	102	93
10 +.....	—	100	103	102	—	100	105	103
Average.....	—	100	99	100	—	100	100	93

See footnote at end of table.

Table 8.6 - Index of fertility^a variations by schooling of woman, for selected combinations of schooling and income of husband, Canada, total areas and metropolitan areas, 1961 - Concluded

Schooling and annual income of husband (income in thousand dollars)	All types of residence				Metropolitan areas			
	Schooling of wife				Schooling of wife			
	Elementary	Secondary	Some university	University degree	Elementary	Secondary	Some university	University degree
B. WOMEN AGED 45-49								
Elementary								
1-3.....	135	100	-	-	128	100	-	-
3-5.....	126	100	-	-	123	100	-	-
5-7.....	128	100	-	-	120	100	-	-
7-10.....	129	100	-	-	116	100	-	-
10 +.....	131	100	-	-	143	100	-	-
Average.....	130	100	-	-	126	100	-	-
Secondary								
1-3.....	123	100	73	-	113	100	-	-
3-5.....	127	100	95	59	127	100	96	-
5-7.....	123	100	85	81	115	100	87	74
7-10.....	122	100	97	93	115	100	102	95
10 +.....	127	100	102	84	115	100	107	84
Average.....	124	100	90	79	117	100	98	84
University degree								
1-3.....	-	100	-	-	-	100	-	-
3-5.....	-	100	-	-	-	100	-	-
5-7.....	-	100	84	102	-	100	-	102
7-10.....	-	100	113	97	-	100	-	110
10 +.....	-	100	96	103	-	100	-	106
Average.....	-	100	98	101	-	100	-	106

^a Number of live-born children per woman.

SOURCE: Table J.4 (Appendix).

covered fewer than 50 couples; this minimum number is not very large and no doubt explains how some indices seem slightly out of line. For each category of husband's schooling, the arithmetic average of indices for different income groups has been calculated. The following findings result:

1. Fertility decreases as the wife's schooling improves. There does seem to be one systematic exception however: where the husband is a university graduate and earns an income of over \$7,000, fertility is frequently higher amongst women who have been to university than amongst those who have attained secondary school.
2. Variations in fertility by wife's schooling are lesser, generally speaking, in the metropolitan areas than for all types of residence as a whole.
3. The fertility of women aged 45-49 is more sensitive to variations in schooling than is the fertility of women in the 35-39 age group.
4. The amplitude of the variations is greater where the husband is not well educated and has a low income.

The reader will be better able to check these findings with the help of Table 8.7. In this table will be found the average indices for each level of schooling of husband as indicated in the preceding table; furthermore, analogous averages for each income level are given. By calculating the arithmetic mean for these average indices, values can be established which correspond to an over-all measure of the influence exercised by the schooling of a woman on fertility. These indices will be found on the lines labelled "average" in the table. These "averages" are very nearly the same, whether obtained on the basis of schooling or income level. We shall use the averages by level of schooling. If the basis chosen is the fertility of women with secondary schooling, women who have had elementary schooling record a 20% surplus at 35-39 years of age (12% in the metropolitan areas) and a 27% surplus at 45-49 years of age (21% for the metropolitan areas). At the other extreme, women graduates reflect a sub-fertility of 8% in the 35-39 age group (7% in the metropolitan areas) and one of 10% in the 45-49 age group (5% in the metropolitan areas). The amplitude of fertility variations in relation to wife's schooling can be measured by comparing the sub-fertility of women who are university graduates to that of women at the primary school level. For all types of residence as a whole, this sub-fertility is 23% in the 35-39 age group and 29% at the 45-49 age group; in the metropolitan areas, the respective percentages are 17% and 22%.

The indices for fertility variations of the woman in relation to her schooling have also been worked out in regard to several sub-populations identified by country of birth, religion and mother tongue. This calculation was only worked out for couples where the husband was earning an

Table 8.7 - Average^a index of fertility by schooling of woman, for each level of schooling and every class of income of husband, for women aged 35-39 and 45-49, Canada, total areas and metropolitan areas, 1961

(Secondary level = 100)

Age of woman, schooling and annual income of husband (in thousand dollars)	Schooling of wife			
	Elementary	Secondary	Some university	University degree
All types of residence				
35-39 years				
Schooling of husband				
Elementary	123	100	—	—
Secondary	118	100	93	85
University degree	—	100	99	100
Average	120.5	100	96.0	92.5
Husband's income				
1-3	125	100	85	—
3-5	120	100	91	93
5-7	118	100	93	84
7-10	121	100	98	96
10+	120	100	106	96
Average	120.8	100	94.6	92.2
45-49 years				
Schooling of husband				
Elementary	130	100	—	—
Secondary	124	100	90	79
University degree	—	100	98	101
Average	127.0	100	94.0	90.0
Husband's income				
1-3	129	100	73	—
3-5	126	100	95	59
5-7	126	100	84	92
7-10	126	100	105	95
10+	129	100	99	94
Average	127.2	100	91.2	85.0
Metropolitan areas				
35-39 years				
Schooling of husband				
Elementary	113	100	—	—
Secondary	112	100	93	—
University degree	—	100	100	93
Average	112.5	100	96.5	93.0
Husband's income				
1-3	114	100	—	—
3-5	115	100	81	—
5-7	112	100	92	84
7-10	118	100	98	93
10+	102	100	106	103
Average	112.2	100	94.2	93.3
45-49 years				
Schooling of husband				
Elementary	126	100	—	—
Secondary	117	100	98	84
University degree	—	100	—	106
Average	121.5	100	98.0	95.0
Husband's income				
1-3	120	100	—	—
3-5	125	100	96	—
5-7	118	100	87	88
7-10	116	100	102	102
10+	129	100	107	95
Average	121.6	100	98.0	95.0

^a All the numbers in this table are arithmetic averages: those given for each schooling level are average indices for different incomes; those for each income group are the average indices for the three schooling levels of the husband (the fact is that the indices for two schooling levels only may be taken at any one time, due to the empty cells in Table 8.6).

SOURCE: Table 8.6.

MEASURE OF SPECIFIC INFLUENCE OF SCHOOLING

annual income of between \$5,000 and \$7,000 and had secondary schooling. The results are not markedly different from those just examined as will be seen on examining the following indices:

Sub-population	Wife's age	Elementary	Wife's schooling		
			Secondary	Some university	University degree
Canadian population...	35-39 years	118	100	92	80
	45-49 "	123	100	85	81
Immigrant women.....	35-39 "	106	100	94	—
	45-49 "	121	100	—	—
Anglo-Protestants ²	35-39 "	115	100	94	83
	45-49 "	121	100	88	81
Anglo-Catholics ²	35-39 "	101	100	—	—
	45-49 "	94	100	—	—
French-Catholics ²	35-39 "	117	100	—	—
	45-49 "	107	100	—	—

It would seem that the excess fertility of women with elementary schooling is low in regard to immigrant women in the 35-39 age group, to Anglo-Catholic women in both age groups and to French-Catholics in the 45-49 age group. These exceptional results may be due, however, to the small number of individuals in each of these categories.

In the foregoing analysis, the husband's income and schooling were held constant. The same type of analysis might be carried out, maintaining the husband's occupation as the constant factor rather than his schooling. The results for this type of calculation will be found in Table 8.8, given equally in the form of indices. We limited our examination to the occupational groups that were best represented and to two income groups which differ depending on the occupation. We shall only examine all types of residence taken as a whole, but women in two age groups (35-39 and 45-49) will be studied. The amplitude of fertility variations increases as we pass from professional and technical occupations to clerical occupations, then to craftsmen and labourers, and finally to primary occupations. In almost all cases, the excess fertility of women with elementary schooling as compared to women of high school level is higher for women in the 45-49 age group than for women in the 35-39 age group. The average of indices in each column is perhaps not very meaningful, but does have some importance nonetheless. The following are the figures obtained:

	35-39 years	45-49 years
Elementary	124.1	129.3
Secondary	100.0	100.0
Some university	101.8	87.3
University degree.....	86.8	87.8

These results are not, as a whole, markedly different from those found earlier in this text.

² Born in Canada.

Table 8.8 – Index of fertility^a variations by schooling of woman, for selected combinations of occupation and income of husband, for women aged 35-39 and 45-49, Canada, 1961

(Secondary level = 100)

Husband's occupation	Husband's annual income (in thousand dollars)	35 - 39 years				45 - 49 years			
		Wife's schooling							
		Elementary	Secondary	Some university	University degree	Elementary	Secondary	Some university	University degree
Professional and technical.....	7-10	108	100	107	94	96	100	108	93
	10+	108	100	102	100	104	100	98	101
Clerical.....	5-7	117	100	95	76	121	100	88	95
	7-10	110	100	129	118	134	100	65	104
Craftsmen	3-5	122	100	91	65	130	100	75	64
	5-7	124	100	87	68	131	100	90	70
Labourers	1-3	125	100	—	—	141	100	—	—
	3-5	116	100	—	—	129	100	—	—
Farmers and stockraisers	3-5	126	100	—	—	149	100	—	—
	5-7	138	100	—	—	157	100	—	—
Loggers	3-5	153	100	—	—	141	100	—	—
	5-7	130	100	—	—	131	100	—	—
Fishermen	1-3	122	100	—	—	133	100	—	—
	3-5	139	100	—	—	113	100	—	—

^a Number of live-born children per woman.

SOURCE: Table J.6 (Appendix).

HUSBAND'S SCHOOLING

It is interesting to see whether the level of the husband's schooling has as much effect on fertility as does the wife's schooling. This question may be answered by conducting the same type of analysis as was carried out for the wife's schooling. In Table 8.9 will be found the index of fertility variations (number of live-born children per married woman), according to the husband's schooling, for women in the 35-39 and 45-49 age groups and for all types of residence taken as a whole. This index is calculated for three schooling levels of the wife, and within each of the three levels, for three income groups of the husband. In other words, this table is presented in the same way as Table 8.6 except that the husband's and wife's schooling have been inverted. At first sight, the fertility variations attributable to the husband's schooling are comparable to those noted in relation to the wife's schooling. It should be noted more particularly that where the women have attended university, but not graduated, and for income groups exceeding \$7,000 a year, fertility increases as we pass from husbands who have attended, but not graduated from university to husbands who are university graduates and sometimes fertility is even higher in the latter case than for the secondary level.

These data will be summarized in a table analogous to Table 8.7. Table 8.10 takes up the averages which appear in Table 8.9 (averages of different income groups for each of the wife's schooling level) and adding thereto, for each income group, the average index of schooling levels. The amplitude of the variations in fertility, according to the husband's schooling, is less where the wife's schooling is higher, and where the husband's income is higher, as we already noted while examining the schooling of the wife.

A reply must still be found to the question raised a little earlier: does fertility vary as much in relation to the husband's schooling as to the wife's? It would seem that variations are not quite as marked in the former case. If the general averages obtained from the average indices for each schooling level are used, the following figures are obtained:

	<u>Elementary</u>	<u>Secondary</u>	<u>Some university</u>	<u>University degree</u>
Women aged 35-39				
Wife's schooling	120.5	100.0	96.0	92.5
Husband's schooling	117.0	100.0	94.7	93.5
Women aged 45-49				
Wife's schooling	127.0	100.0	94.0	90.0
Husband's schooling	124.5	100.0	97.5	97.0

Table 8.9 – Index of fertility^a variations by schooling of husband, for selected combinations of schooling of woman and income of husband, for women aged 35-39 and 45-49, Canada, 1961

(Secondary level = 100)

NOTE: We ignored those cases where less than 50 couples were involved.

Wife's schooling and husband's annual income (in thousand dollars)	35-39 years				45-49 years			
	Husband's schooling							
	Elementary	Secondary	Some university	University degree	Elementary	Secondary	Some university	University degree
Elementary								
1-3.....	123	100	—	—	138	100	—	—
3-5.....	116	100	94	—	121	100	—	—
5-7.....	116	100	93	—	125	100	—	—
7-10.....	119	100	104	—	128	100	—	—
10 +.....	123	100	—	—	125	100	—	—
Average.....	119	100	97	—	127	100	—	—
Secondary								
1-3.....	123	100	90	67	126	100	89	68
3-5.....	121	100	87	91	123	100	93	91
5-7.....	115	100	97	90	120	100	99	95
7-10.....	112	100	97	95	121	100	98	95
10 +.....	105	100	98	102	121	100	102	108
Average.....	115	100	94	89	122	100	96	91
Some university								
1-3.....	—	100	—	—	—	100	—	—
3-5.....	—	100	94	90	—	100	87	—
5-7.....	—	100	86	91	—	100	116	95
7-10.....	—	100	106	112	—	100	96	111
10 +.....	—	100	87	97	—	100	99	102
Average.....	—	100	93	98	—	100	99	103

^a Number of live-born children per woman.

SOURCE: Table J.4 (Appendix).

Table 8.10 - Average^a index of fertility by schooling of husband, for each level of schooling and every class of income of husband, for women aged 35-39 and 45-49, Canada, 1961
(Secondary level = 100)

Wife's schooling and husband's annual income (in thousand dollars)	35-39 years				45-49 years			
	Husband's schooling							
	Elementary	Secondary	Some university	University degree	Elementary	Secondary	Some university	University degree
Wife's schooling								
Elementary.....	119	100	97	—	127	100	—	—
Secondary.....	115	100	94	89	122	100	96	91
Some university.....	—	100	93	98	—	100	99	103
Average	117.0	100	94.7	93.5	124.5	100	97.5	97.0
Husband's income								
1-3	123	100	90	67	132	100	89	68
3-5	118	100	90	91	122	100	90	91
5-7	116	100	95	90	122	100	108	95
7-10	116	100	100	95	124	100	97	103
10+	114	100	98	102	123	100	100	105
Average	117.4	100	94.6	89.0	124.6	100	96.8	92.4

^a All figures in this table are arithmetic averages; those for each schooling level are average indices for various income groups; those for each income group are the average indices of the three schooling levels for the wife.

SOURCE: Table 8.9.

A finding previously established should be recalled in regard to these results: the influence of schooling on fertility is more particularly felt in the transition from the primary to the secondary school level. Couples who have had a university education do not have a fertility that is much lower than do couples with a high school education and this is as true for the husband's schooling as it is for the wife's.

3. COMPARISONS WITH THE PAST AND WITH THE U.S.A.

COMPARISON WITH CHARLES' STUDY

It will be remembered that Enid Charles had more particularly studied the fertility of women who were between 45 and 55 years of age in 1941. By comparing these women with those in the same age group in 1961, we can get some idea of the evolution that took place over a twenty-year period. The data necessary for this comparison will be found in Table 8.11.

Table 8.11 – Fertility^a of women ever married by schooling of woman: comparison of Enid Charles' results with those of the 1961 Census

Sub-population and schooling ^b of woman	Women aged 45-54 in 1941 ^c		Women aged 65-74 in 1961		Women aged 45-54 in 1961	
	Rural	Urban	Rural	Urban	Rural	Urban
Protestants of English mother tongue						
Elementary	4.02	2.93	4.03	2.95	3.71	2.51
Secondary	3.12	2.24	3.05	2.32	2.80	1.97
Post-secondary	2.54	1.90	2.58	2.03	2.29	1.95
Secondary/Elementary..	0.776	0.764	0.756	0.786	0.754	0.785
Post-secondary/ Elementary	0.632	0.648	0.640	0.688	0.617	0.777
Catholics of English' mother tongue						
Elementary	5.42	4.06	5.40	4.10	5.07	3.33
Secondary	4.58	3.20	4.57	3.25	4.21	2.73
Post-secondary	3.32	2.66	3.43	2.90	2.92	2.38
Secondary/Elementary..	0.845	0.788	0.846	0.792	0.830	0.820
Post-secondary/ Elementary	0.613	0.655	0.635	0.707	0.576	0.714
Catholics of French mother tongue						
Elementary	7.84	5.76	7.52	5.66	6.55	3.66
Secondary	6.74	4.82	6.76	4.65	5.39	2.99
Post-secondary	5.84	4.04	6.37	4.45	5.11	2.40
Secondary/Elementary..	0.860	0.836	0.898	0.821	0.823	0.817
Post-secondary/ Elementary	0.745	0.701	0.847	0.786	0.780	0.656

^a Number of live-born children per woman ever married.

^b See footnote ^a, Table 6.18.

^c See footnote ^b, Table 6.18.

SOURCES: DBS, *Census of Canada, 1961*, unpublished table; Enid Charles, *op. cit.*, p. 68.

These data allow us to compare the women aged 45-54 in 1941, 65-74 in 1961 (survivors of the former group), and 45-54 in 1961; furthermore, separate comparisons can be worked out for urban and rural women and for the three cultural groups, namely Anglo-Protestants, Anglo-Catholics and French-Catholics. In each case, we have recorded the number of live-born children per married woman for three schooling levels, as well as the ratio of fertility for women with a secondary and post-secondary schooling to that for women with elementary schooling. We should note, first of all, that, with some exceptions,³ the number of live-born children per woman does not differ by more than about one-tenth between women aged 45-54 in 1941 and those aged 65-74 in 1961. To measure the changes that may have arisen between the two groups of generations, we shall use only information from the 1961 Census (women aged 65-74 and 45-54). If the ratios in Table 8.11 are changed to reductions (in percentages) in comparison to the elementary level, the following results are obtained:

	Reduction of fertility, in relation to the elementary level (in %)			
	Rural		Urban	
	65-74 years	45-54 years	65-74 years	45-54 years
Secondary level				
Anglo-Protestants	24.4	24.6	21.4	21.5
Anglo-Catholics	15.4	17.0	20.8	18.0
French-Catholics	10.2	17.7	17.9	18.3
Average	16.7	19.8	20.0	19.3
Post-secondary level				
Anglo-Protestants	36.0	38.3	31.2	22.3
Anglo-Catholics	36.5	42.4	29.3	28.6
French-Catholics	15.3	22.0	21.4	34.4
Average	29.3	34.2	27.3	28.4

Several conclusions may be inferred:

1. Generally speaking, the decrease in fertility brought about by schooling is higher among women aged 45-54 than among their

³ There is one among the Anglo-Catholics (urban, post-secondary level) and four among the French-Catholics (rural, elementary and post-secondary levels; urban, secondary and post-secondary levels). These exceptions are perhaps due to the difference in definitions of schooling levels, in two different censuses.

- elders. There are several exceptions among urban women: Anglo-Catholics at the secondary and post-secondary levels; Anglo-Protestants at the post-secondary level.
2. This increase in fertility differences due to schooling is more pronounced amongst rural than amongst urban women.
 3. In the whole, secondary education reduces fertility by 19% and access to post-secondary studies adds a supplementary reduction of 11%, which makes a total reduction of 30% in relation to the elementary level. These results are not widely different from those already found by an analysis of the data in Table 8.7.
 4. "Sensitivity" to the schooling of women from different cultural groups is not the same. Amongst rural women, secondary schooling affects English- and French-Catholics less than the Protestant women but, on the other hand, the French-Catholics are less affected by post-secondary education. Amongst urban women, cultural groups do not differ so markedly in their behaviour. It will be noted, however, that post-secondary education has more effect on English-speaking women in older age groups, but the opposite is true of women in the younger age groups.

It should be underlined that, on the basis of these results, schooling seems to retain the influence it exercises on fertility. Indeed schooling, with religion, is amongst the rare factors for which there does not seem to be a trend towards convergence in the fertility levels, over the course of time. What we have measured, however, are the relative differences. The absolute differences, for their part, have been reduced.

COMPARISON WITH THE UNITED STATES

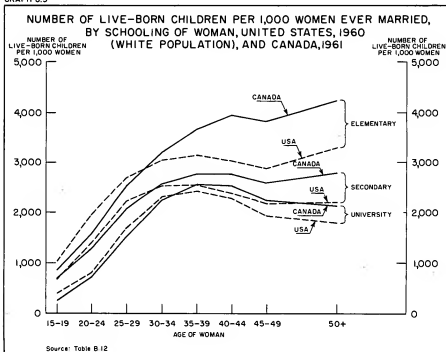
Data for the U.S.A. (1960 Census) and for Canada with regard to the number of live-born children per ever-married woman, by schooling level, can be compared. To that end, some regroupings must be worked out to give three schooling levels: the elementary, the secondary and university. Women are classified by the last cycle of studies which they began, but not necessarily completed. Table 8.12 indicates the data required for this comparison. We felt it more interesting to compare Canadian fertility with the fertility of the white American population only. Graph 8.3 reproduces the same data. Under an age which varies between about 30 and 35, depending on the schooling level, American fertility is higher than Canadian fertility, probably because marriage is at an earlier age in the U.S.A. Beyond this age level, Canadian fertility is higher and this excess is greater as the schooling level is lower. In other words, fertility in the two countries

Table 8.12 – Number of live-born children per 1,000 women ever married, by age and by schooling of woman, United States, 1960 (white population) and Canada, 1961

Age of woman	Woman's schooling					
	Elementary		Secondary		University	
	U.S.A.	Canada	U.S.A.	Canada	U.S.A.	Canada
15 - 19 years ..	1,024	849	671	693	390	223
20 - 24 " ...	1,941	1,578	1,404	1,264	798	718
25 - 29 " ...	2,687	2,527	2,202	2,063	1,681	1,503
30 - 34 " ...	3,027	3,203	2,521	2,567	2,305	2,219
35 - 39 " ...	3,132	3,664	2,529	2,767	2,416	2,530
40 - 44 " ...	3,011	3,936	2,376	2,768	2,247	2,516
45 - 49 " ...	2,868	3,815	2,154	2,581	1,917	2,229
50 years and over	3,291	4,235	2,183	2,787	1,782	2,122

SOURCES: U.S.A.: US Census of Population, 1960, *Women by Number of Children Ever Born*, Table 25. CANADA: DBS, *Census of Canada, 1961*, unpublished table.

GRAPH 8.3



tends to be the same as women attain a higher schooling level. The consequence is that, beyond the age of 35, differences in fertility attributable to schooling are higher in Canada than in the U.S.A.

CONCLUSION

We have found that schooling leads to a substantial reduction in fertility. Even when an attempt is made to eliminate the influence of certain factors which vary, generally speaking, with scholastic attainments, there is a 30% reduction in making the transition from the elementary to the university level: about two thirds of this reduction are already reflected by women who have attended secondary school. On the other hand, the effect of schooling on fertility does seem to persist: at least, this is what becomes apparent when women between the ages of 65 and 75 are compared with women between the ages of 45 and 55. Wherefore, it would seem possible to make a forecast of some importance. Over 40% of the women who, in 1961, were between 15 and 65 years of age, had not gone beyond the elementary school. Yet, there seems to be no doubt that within a few years, this fraction will be substantially reduced and this will result in an appreciable drop in the over-all fertility of the population. Now, were other conditions maintained constant, and all women to attend secondary school at least, there would be a drop of around 8% in the over-all fertility of the population. To this must be added the influence which this same change would have on the male sex since, as we have already noted, the husband's schooling has almost as much influence on the fertility of couples as does the wife's. These are weighty arguments which lead us to believe that, on the average, fertility will tend to decrease.

Chapter 9

VARIATIONS IN FERTILITY BY INCOME

For a very long time, measures of fertility by income have shown there exists an inverse ratio between these two phenomena. It is true that, for some time, numerous studies have shown that the relationship is not as simple as that. For instance, it has been found that if fertility drops with the transition from low to medium income levels, it also tends to rise as we reach the higher income levels. On the other hand, more extensive research has shown that for certain categories of couples, there is a positive relationship between income and fertility. The most frequently quoted example is probably that of "number and spacing planned" couples in the famous Indianapolis study¹ on the white Protestant families in that city. Other examples have been added to this one but there are even earlier cases: Gwendolyn Z. Johnson reports, for instance, the case of Polish women born between 1855 and 1908 living on farms, and whose fertility increased as did the size of the farm.²

Indeed, the most natural relationship seems to be the *positive* relationship between fertility and income. To a certain extent, children may be considered as consumer goods and the consumption of these goods can be expected to increase with the increase in income. However, even when viewed in this particular manner, which is no doubt too simple a viewpoint, the problem is more complex than may appear at first sight because children may be consumed in the form of quantity (number of children) or in the form of quality (amount of care and expenditures given to each child); it may be, for instance, that increase in income increases consumption in the form of

¹ This is from a survey conducted in 1941. The results are in Clyde V. Kiser and P.K. Whelpton, "Résumé of the Indianapolis Study of Social and Psychological Factors Affecting Fertility", in *Population studies*, Vol. 7, Nov. 1953, pp. 95-110.

² "Differential Fertility in European Countries", in *Demographic and Economic Change in Developed Countries*, Princeton, Princeton University Press, 1960, pp. 36-72.

quality rather than quantity.³ Regardless of the manner in which the children may be considered, it seems that there is a trend for fertility to increase with income, *provided all other conditions remain unchanged*. And it is because, in reality, other conditions change at the same time as income changes, that the positive relationship we might expect does not, in fact, materialize. Indeed, as income increases, schooling in particular, increases as well, and introduces a higher degree of the rational element in the management of life; knowledge about contraceptives is more rationally grasped and needs are felt which come into conflict with the desire for children. In most cases, these factors, related to schooling and which have a negative effect on fertility, more than compensate for the positive effects that the increase in income might be expected to exercise.

These observations can be verified in the analysis of the data from the 1961 Census that follows hereunder. When the fertility variations related to income are examined without taking other variables into account, the usual negative relationship will be noted; but, where certain variables are kept constant, such as the schooling of husband and wife, a different result is obtained in most cases. Indeed, one of the salient aspects of this study will probably be to underscore the general character of the positive influence exercised on fertility by income.

This chapter will be divided into three sections. The first will cover a study of the fertility variations according to husband's income, on the one hand, and to family income on the other (for couples where the wife is active): number of live-born children per woman, distribution by number of children and parity-progression ratios. In the second section, we shall attempt to define the specific role of income, by studying the variations in fertility for categories of couples defined by scholastic attainment of spouses, husband's occupation, religion and mother tongue. Finally, in a brief section, there will be some comparisons with the 1941 Census results and with the United States.

In this chapter, couples living on a farm will be excluded altogether because no information was collected on their income in the 1961 Census. Incomes are grouped into seven classes. In Table 9.1, will be found the distribution of women ever married between the ages of 15 to 65, by husband's income, for all types of residence, urban areas and the rural non-farm environment. As might be expected, the higher income groups are concentrated in urban areas (91.5% of those earning over \$10,000 and more); whereas, in the rural non-farm environment, which is the home of 19.4% of

³ On this point, the excellent paper by Gary S. Becker, "An Economic Analysis of Fertility" should be consulted. It is in *Demographic and Economic Change in Developed Countries*, Princeton, Princeton University Press, 1960, pp. 209-231.

the women in Table 9.1, are to be found 40.7% of those earning less than \$1,000.

Table 9.1 – Distribution of married women, aged 15-64, by annual income of husband, Canada, for various types of residence, 1961

Annual income of husband (in thousand dollars)	Absolute figures (000's)			Percentage distribution		
	Urban	Rural non-farm	Total	Urban	Rural non-farm	Total
0	14.2	5.4	19.6	0.6	0.9	0.7
Less than 1	87.1	59.7	146.8	3.5	10.1	4.8
1-3	398.4	198.1	596.5	16.2	33.5	19.6
3-5	1,026.7	212.8	1,239.4	41.9	36.0	40.7
5-7	563.7	77.3	641.0	23.0	13.1	21.1
7-10	217.6	24.1	241.7	8.9	4.1	7.9
10 and over	144.1	13.4	157.6	5.9	2.3	5.2
Total.	2,451.8	590.8	3,042.6	100.0	100.0	100.0

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

1. FERTILITY VARIATIONS DUE TO INCOME

NUMBER OF LIVE-BORN CHILDREN

We will not take into account those couples where the husband has no income; their fertility is about nil up to the age of 30 (age of woman) then rises very rapidly as the age of the woman increases and finally reaches a level quite close to that of couples where the husband earns less than \$1,000 a year, when the wife is 60 years of age or more. As for other classes of income, the fertility rates (number of live-born children per 1,000 women) are to be found in Table 9.2, and in Graph 9.1. These rates are given for urban areas, cities of over 100,000 inhabitants, the rural non-farm environment and for all types of residence as a whole. Amongst income groups, there is only a slight difference in fertility up to the age of 30 in the case of rural non-farm women and up to the age of 40 in the case of urban women. Beyond these age levels, fertility is, generally speaking, lower in proportion as income is higher and the differences become greater as the age of the woman increases. Here, for some age groups, are the relative differences in fertility (in percentages in relation to the fertility

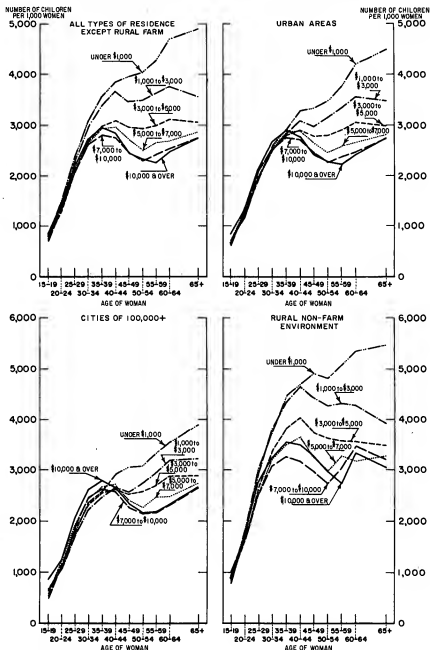
Table 9.2 - Number of live-born children per 1,000 married women, by age of wife and by annual income of husband, Canada, for various types of residence, 1961

Type of residence and husband's annual income (in thousand dollars)	Age of woman (in years)										
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
Urban											
Under 1	632	1,233	1,920	2,607	2,926	3,286	3,331	3,470	3,770	4,200	4,495
1-3	707	1,170	1,967	2,500	2,829	3,093	2,978	3,142	3,332	3,543	3,463
3-5	680	1,208	1,980	2,521	2,802	2,886	2,789	2,805	2,903	3,044	2,988
5-7	678	1,297	2,069	2,590	2,861	2,880	2,645	2,448	2,603	2,654	2,812
7-10	610	1,256	2,031	2,581	2,751	2,712	2,441	2,269	2,370	2,458	2,723
10 and over	839	1,300	2,128	2,679	2,911	2,780	2,420	2,268	2,218	2,410	2,739
Cities of 100,000 and over											
Under 1	588	1,062	1,762	2,338	2,596	2,913	3,038	3,070	3,314	3,564	3,899
1-3	669	1,052	1,738	2,205	2,477	2,668	2,574	2,725	2,939	3,192	3,222
3-5	647	1,118	1,835	2,313	2,560	2,631	2,521	2,567	2,694	2,871	2,876
5-7	541	1,208	1,924	2,432	2,669	2,705	2,411	2,261	2,455	2,469	2,737
7-10	476	1,144	1,907	2,463	2,620	2,572	2,253	2,141	2,176	2,314	2,640
10 and over	850	1,234	2,052	2,603	2,786	2,648	2,320	2,154	2,177	2,318	2,662
Rural non-farm											
Under 1	863	1,821	3,022	3,753	4,485	4,700	4,907	4,819	5,074	5,355	5,462
1-3	903	1,702	2,905	3,825	4,353	4,660	4,418	4,252	4,304	4,284	3,912
3-5	876	1,653	2,649	3,387	3,821	4,019	3,738	3,620	3,575	3,553	3,467
5-7	861	1,675	2,608	3,209	3,491	3,640	3,257	2,975	3,273	3,167	3,260
7-10	1,000	1,717	2,528	3,081	3,238	3,177	2,968	2,731	3,030	3,463	3,200
10 and over	778	1,765	2,761	3,212	3,533	3,499	3,263	2,947	2,727	3,325	3,034
All types of residence except rural farm											
Under 1	736	1,471	2,349	3,065	3,557	3,846	3,962	4,027	4,293	4,705	4,880
1-3	770	1,338	2,288	2,974	3,383	3,670	3,476	3,488	3,617	3,747	3,562
3-5	720	1,286	2,102	2,681	2,986	3,082	2,942	2,928	2,995	3,108	3,046
5-7	713	1,353	2,139	2,667	2,938	2,970	2,714	2,501	2,668	2,702	2,862
7-10	702	1,335	2,090	2,632	2,797	2,758	2,486	2,306	2,433	2,543	2,764
10 and over	823	1,371	2,205	2,732	2,959	2,839	2,483	2,319	2,254	2,486	2,762

SOURCE: DBS, Census of Canada, 1961, unpublished table.

GRAPH 9.1

NUMBER OF LIVE-BORN CHILDREN PER 1,000 MARRIED WOMEN,
BY AGE OF WIFE AND BY ANNUAL INCOME OF HUSBAND,
CANADA, FOR VARIOUS TYPES OF RESIDENCE, 1961



TRENDS AND FACTORS OF FERTILITY IN CANADA

of lower income groups) between incomes of over \$10,000 and those under \$1,000:

Age of woman	Differences in percentages		
	Urban areas	Cities of 100,000 +	Rural non-farm
40-44 years	15.5	9.1	32.5
55-59 years	41.2	34.3	40.3
65 years and over	39.1	31.7	44.4

The differences are much lower in the greater urban areas than for all types of residence as a whole and this was to be expected as the greater urban areas are, obviously, a more homogeneous environment than are all types of residence taken as a whole. It would seem that differences in fertility by income decrease considerably when passing from women between 55 and 59 years of age, to women between 40 and 44 years of age. It may be that for women in the latter age group, income differences have not had their full effect as yet, but this factor does not explain the considerable deviations found in comparing these two age groups, at least in so far as urban women are concerned. A word of caution should be made about the interpretation one might be tempted to make upon the similarity in fertility rates, by income, for women aged between 30 and 40. It might be thought that income had lost virtually all its effect on the level of fertility but there is another interpretation, which is probably fairer. The effect of income is probably just about compensated by that of other factors, exerting a pull in exactly the reverse direction. This statement will be followed up in the second section.

Fertility has also been measured by family income, in the case of couples where the wife has a remunerative employment. According to the sample used in collecting data on fertility, in 1961, there were 683,000 women aged between 15 and 65, living with their husband, and who were actively employed (except women living on farms). The following is the distribution of these couples according to annual family income:

No income:	0.1%
Under \$1,000:	1.2%
\$ 1,000 to \$ 3,000:	9.2%
\$ 3,000 to \$ 5,000:	24.9%
\$ 5,000 to \$ 7,000:	32.1%
\$ 7,000 to \$10,000:	24.1%
\$10,000 and over:	8.4%
Total	100.0%

Table 9.3 and Graph 9.2 give the number of live-born children per 1,000 married women, by age and family income, for urban areas, for cities of 100,000 inhabitants and for the rural non-farm environment. The differences in fertility between income groups are not quite the same as when measured in relation to the husband's income. On the whole, fertility becomes lower as the income gets higher. Certain irregularities in the curves are no doubt due to the small numbers of couples. But a new aspect now comes to light: the amplitude of the differences in fertility (in absolute rates) is about constant, whatever the age of the woman, except in the rural non-farm environment, where the difference between income groups tends to increase amongst women over the age of 50. Why, before the age of 30 (or 40 in the rural non-farm environment) is there now an inverse ratio between fertility and family income, whereas fertility was about the same, no matter what the income level, when measured in relation to the husband's income? It is probably that the higher the family income, the greater the fraction of women spending a major part of their time on activities outside the home. Since the latter phenomenon is related to a lower fertility rate, it is not surprising to find this inverse relationship at all ages, as indicated in the graph. After the age of 30 (or 40), we find the same phenomenon as was observed using the husband's income: the higher the income, the lower the fertility but the differences are much less important when we measure with family income rather than with the husband's income. This must be due to the fact that a large number of working wives over the age of 40 are women who either did not bear any children at all or only bore few children, and were already actively employed before they reached that age, so that even in the low income groups, fertility level is low. Women who have borne large families have had to spend the greater part of their active working years in the home and, once freed of their family responsibilities are probably not inclined to start working outside the home. To summarize, a sizable proportion of women who have had large families have not been able to work at gainful employment outside the home, so that even at the lower income levels, couples where the woman is gainfully employed, are couples with relatively low fertility.

DISTRIBUTION BY NUMBER OF CHILDREN AND PARITY-PROGRESSION RATIOS

The percentage distribution of married women by the number of children they have borne is to be found in Table 9.4, for each income group, for two types of residence (urban and rural non-farm) and for four age groups. In urban areas, childless couples are less frequent in the higher than in the lower income groups, for women under 40; in the 35-39 age group, for

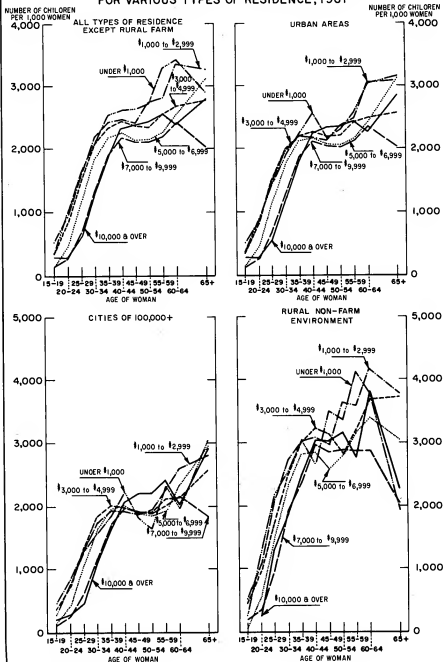
Table 9.3 - Number of live-born children per 1,000 married women (women in labour force and living with their husband only), by age of wife and by annual family income, Canada, for various types of residence, 1961

'Type of residence and annual family income (in thousand dollars)	Age of woman (in years)										
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
Urban											
Under 1	375	893	1,431	1,906	2,232	2,576	2,162	2,297	2,573	3,032	3,167
1-3	522	882	1,448	1,960	2,184	2,174	2,125	2,370	2,487	3,045	3,077
3-5	355	801	1,476	1,995	2,196	2,261	2,169	2,209	2,418	2,498	2,577
5-7	136	440	1,152	1,784	2,111	2,163	2,071	2,050	2,164	2,429	3,124
7-10	128	263	684	1,294	1,867	2,104	2,036	2,023	2,118	2,350	2,022
10 and over	286	274	559	1,235	1,815	2,244	2,321	2,359	2,528	2,263	2,851
Cities of 100,000 and over											
Under 1	286	763	1,300	1,580	1,864	2,245	1,833	1,649	2,333	1,971	3,029
1-3	476	830	1,304	1,759	1,938	1,929	1,883	1,963	2,284	2,611	2,809
3-5	363	751	1,374	1,845	2,015	1,990	1,908	1,910	2,128	2,136	2,582
5-7	139	425	1,067	1,671	1,962	2,027	1,894	1,853	1,932	2,343	2,972
7-10	116	245	626	1,186	1,724	1,988	1,909	1,888	2,003	2,159	1,831
10 and over	200	282	452	1,131	1,653	2,072	2,212	2,213	2,413	2,020	2,923
Rural non-farm											
Under 1	250	1,286	2,191	2,558	3,059	2,673	3,492	3,348	4,120	3,773	1,941
1-3	527	1,076	2,123	2,748	3,051	3,087	2,989	3,634	3,592	4,175	3,790
3-5	441	968	1,727	2,518	3,014	3,237	3,136	2,822	3,216	3,693	3,726
5-7	59	533	1,518	2,352	2,825	2,840	2,596	2,812	3,190	3,400	3,040
7-10	200	355	986	1,936	2,391	2,980	2,867	2,893	2,870	2,878	2,063
10 and over	—	250	1,310	1,889	2,522	3,032	3,022	3,164	2,784	3,818	2,286
All types of residence except rural farm											
Under 1	363	988	1,627	2,087	2,524	2,609	2,628	2,714	3,294	3,314	2,892
1-3	524	936	1,612	2,178	2,420	2,474	2,407	2,730	2,806	3,357	3,278
3-5	367	823	1,513	2,079	2,334	2,448	2,359	2,328	2,553	2,690	2,781
5-7	131	448	1,187	1,839	2,189	2,242	2,136	2,141	2,276	2,565	3,112
7-10	135	270	704	1,343	1,907	2,184	2,111	2,112	2,200	2,420	2,028
10 and over	291	273	615	1,305	1,882	2,313	2,386	2,431	2,557	2,407	2,798

SOURCE: DBS, Census of Canada, 1961, unpublished table.

GRAPH 9.2

NUMBER OF LIVE-BORN CHILDREN PER 1,000 MARRIED WOMEN (WOMEN IN LABOUR FORCE AND LIVING WITH THEIR HUSBAND ONLY), BY AGE OF WIFE AND BY ANNUAL FAMILY INCOME, CANADA, FOR VARIOUS TYPES OF RESIDENCE, 1961



TRENDS AND FACTORS OF FERTILITY IN CANADA

instance, the percentage of childless couples is 7.5 where the husband's income is over \$10,000 and 14.4 where the husband's income is under \$1,000. There is scarcely any difference, in this regard, when women are older; the higher infertility of low income couples only becomes truly apparent, in the rural non-farm environment, amongst women aged 35-39. On the other hand, there is a greater fraction of low income than of high income families, in those categories where there are five children and more (in urban areas) or six children and more (in the rural non-farm environment). Amongst the urban couples where the woman is aged between 45 and 50, there are only 5.0% whose income is over \$10,000 and who have six children or more; the percentage of couples where the husband earns less than \$1,000 works out to 18.7%. In the rural non-farm environment these percentages are respectively 13.9 and 38.9.

Table 9.4 - Percentage distribution of married women by number of live-born children and by annual income of husband, for selected age groups, Canada, for selected types of residence, 1961

Type of residence, age of wife and husband's annual income (in thousand dollars)	Number of live-born children							
	0	1	2	3	4	5	6	7+
Urban								
20-24 years								
Under 1.....	31.5	34.5	20.7	8.5	2.8	1.3	0.5	0.1
1-3.....	31.3	36.4	20.9	8.2	2.3	0.6	0.2	0.1
3-5.....	28.8	36.3	23.6	8.4	2.2	0.4	0.2	0.1
5-7.....	26.5	34.2	26.5	9.6	2.4	0.6	0.2	0.0
7-10.....	27.5	34.2	26.9	8.5	2.3	0.4	0.1	0.1
10+.....	23.3	37.8	27.8	8.0	2.8	0.2	—	—
35-39 years								
Under 1.....	14.4	16.9	19.4	18.5	9.4	8.1	5.1	8.1
1-3.....	13.2	16.3	23.3	17.5	11.3	6.6	4.4	7.4
3-5.....	10.6	14.6	25.7	20.1	12.5	7.3	3.9	5.3
5-7.....	8.0	12.2	27.0	23.4	14.1	7.2	3.7	4.3
7-10.....	7.9	10.9	29.0	25.4	14.6	6.5	2.8	2.7
10+.....	7.5	8.8	25.1	27.8	17.1	7.5	3.3	2.8
45-49 years								
Under 1.....	13.5	14.7	18.7	16.1	10.1	8.2	6.1	12.6
1-3.....	17.4	15.6	19.7	14.6	10.8	6.9	4.8	10.2
3-5.....	14.2	16.9	23.8	16.8	10.4	6.3	4.0	7.6
5-7.....	13.1	16.7	27.4	17.9	10.5	5.3	3.6	5.5
7-10.....	12.8	17.3	29.9	19.2	10.8	4.0	2.5	3.6
10+.....	12.8	15.2	30.2	21.7	10.5	4.6	2.2	2.8
65 years and over								
Under 1.....	12.5	10.0	13.0	12.4	11.5	8.8	6.6	25.2
1-3.....	14.7	13.5	18.0	15.4	10.9	7.6	5.4	14.5
3-5.....	15.8	16.3	20.4	15.6	10.1	7.5	4.5	9.8
5-7.....	16.5	16.2	21.9	17.3	9.7	6.1	3.7	8.6
7-10.....	16.6	17.4	22.4	16.7	10.5	6.2	1.9	8.3
10+.....	15.1	14.7	22.9	21.1	11.1	5.5	3.2	6.4

Table 9.4 – Percentage distribution of married women by number of live-born children and by annual income of husband, for selected age groups, Conodo, for selected types of residence, 1961 – Concluded

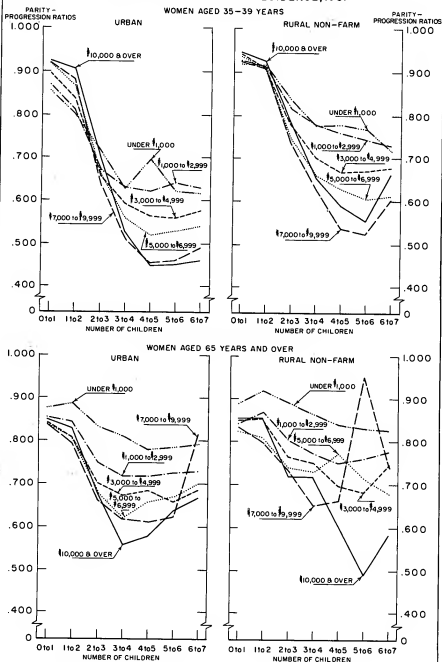
Type of residence, age of wife and husband's annual income (in thousand dollars)	Number of live-born children							
	0	1	2	3	4	5	6	7+
Rural non-farm								
20-24 years								
Under 1	15.1	29.9	27.3	16.7	8.5	1.4	1.1	—
1-3	17.5	30.8	28.4	14.4	6.0	2.2	0.4	0.2
3-5	17.6	30.5	30.5	14.5	4.8	1.5	0.4	0.1
5-7	17.1	28.5	32.6	15.8	4.2	1.3	0.5	0.1
7-10	16.6	27.9	31.6	17.0	4.8	2.1	—	—
10+	16.4	24.7	34.2	16.4	7.0	1.3	—	—
35-39 years								
Under 1	8.1	7.8	13.7	15.8	12.1	9.9	9.3	23.3
1-3	7.3	8.2	15.6	15.2	13.0	10.5	8.2	22.0
3-5	6.0	8.8	18.8	19.9	15.6	10.2	6.7	14.0
5-7	6.6	8.8	21.4	21.7	15.5	10.3	6.1	9.6
7-10	7.7	8.4	22.1	23.1	18.0	9.9	4.3	6.5
10+	5.6	7.2	18.9	23.8	18.4	11.7	4.9	9.5
45-49 years								
Under 1	10.7	9.1	12.6	12.2	8.7	7.8	8.6	30.3
1-3	11.0	10.2	14.8	13.3	10.4	9.1	7.5	23.7
3-5	10.4	11.3	18.9	17.5	11.8	8.2	6.0	15.9
5-7	11.2	13.1	20.7	19.9	12.8	7.9	4.2	10.2
7-10	11.8	14.9	25.3	18.5	11.1	5.9	3.6	9.0
10+	9.9	12.6	21.7	22.2	13.7	6.0	3.5	10.4
65 years and over								
Under 1	11.3	7.3	8.9	9.9	10.1	8.9	7.7	35.9
1-3	16.0	11.1	14.4	13.4	11.3	8.1	5.8	19.9
3-5	15.1	12.6	17.2	13.8	12.5	9.2	5.0	14.6
5-7	17.7	15.8	17.3	13.4	8.2	7.9	6.3	13.3
7-10	16.9	16.9	17.9	16.9	10.6	1.0	5.2	14.6
10+	14.8	12.5	20.6	14.8	14.8	11.5	4.6	6.4

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

In changing these distributions into parity-progression ratios, a pretty clear picture emerges of the behavioural differences between couples in each income category. Graph 9.3 clearly demonstrates that in urban areas, for women between 35 and 39 years of age, the fraction of couples who have had at least one child rises as income rises. This is equally true in the transition from the one- to the two-child family. But in the cases of ratios related to larger families, the order is reversed, and the differences between income groups are quite noticeable. Among women of the same age who live in the rural non-farm environment, we obtain the same results except that there is virtually no difference between income levels, for the ratios of the first two orders. In the case of couples where the wife was over 65 in 1961, the probability of having at least one child is less than for women

GRAPH 9.3

PARITY-PROGRESSION RATIOS BY ANNUAL INCOME OF HUSBAND,
WOMEN AGED 35-39 AND 65 AND OVER, CANADA,
FOR SELECTED TYPES OF RESIDENCE, 1961



Source: Table 9.4

aged 35-39 (for both types of residence), and the same is true for the parity-progression ratio from one to two children. But from the third child, the older women are markedly more fertile than the younger, and the deviations related to income levels are those customarily found, except that the parity-progression ratios are probably greater amongst couples where the husband earns more than \$10,000 than amongst couples where the husband's income varies between \$7,000 and \$10,000.

An examination of those couples where the woman is gainfully employed does not bring to light any particularly new aspects of the question (Table 9.5 and Graph 9.4). We confined our studies to the urban residence, due to the irregularities which occur in calculations involving the small number of individuals in the rural non-farm environment. It should be noted

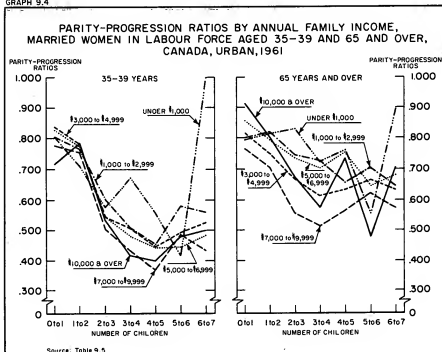
Table 9.5 – Percentage distribution of married women by number of live-born children and by annual family income, for selected age groups of women in the labour force, Canada, urban, 1961

Age of woman, annual family income (in thousand dollars)	Number of live-born children							
	0	1	2	3	4	5	6	7+
20-24 years								
Under 1.....	41.9	35.2	15.6	6.5	0.8	—	—	—
1-3.....	40.3	37.9	16.4	4.7	0.5	0.1	—	0.1
3-5.....	46.1	34.4	14.2	4.1	0.1	0.1	—	0.1
5-7.....	68.0	22.8	7.0	1.7	0.3	0.1	0.0	0.0
7-10.....	80.7	13.9	4.2	1.0	0.1	—	0.0	0.0
10+.....	80.6	12.3	6.2	0.9	—	—	—	—
35-39 years								
Under 1.....	19.6	23.2	24.2	10.8	9.8	7.2	—	5.2
1-3.....	19.6	18.7	24.6	18.2	10.3	3.6	2.2	2.8
3-5.....	16.5	18.0	29.8	17.6	10.0	4.1	1.9	2.1
5-7.....	17.5	18.8	29.0	18.0	9.3	4.1	1.7	1.6
7-10.....	22.4	19.2	28.9	16.8	8.0	2.4	1.3	1.0
10+.....	28.3	15.4	26.3	17.4	7.5	2.6	1.2	1.2
45-49 years								
Under 1.....	22.5	21.7	21.7	13.6	9.1	3.5	2.7	5.2
1-3.....	23.6	20.0	22.5	13.1	9.1	5.4	3.1	3.2
3-5.....	21.4	19.5	24.8	14.8	9.0	4.1	2.6	3.7
5-7.....	18.7	21.1	28.5	15.2	8.3	3.9	2.1	2.2
7-10.....	19.8	18.9	28.9	17.0	8.2	3.7	1.8	1.7
10+.....	16.2	16.3	28.8	19.2	9.7	4.4	2.2	3.2
65 years and over								
Under 1.....	20.4	14.8	11.0	14.8	9.3	13.1	1.7	14.8
1-3.....	19.9	14.4	16.9	13.3	12.2	6.9	5.8	10.7
3-5.....	18.3	20.4	20.4	15.8	9.2	5.3	3.9	6.7
5-7.....	14.3	17.4	18.0	14.9	8.7	9.4	5.5	11.8
7-10.....	23.6	22.6	23.8	14.6	6.7	3.3	2.3	3.1
10+.....	8.9	18.1	23.9	20.8	7.5	10.6	3.0	7.2

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

TRENDS AND FACTORS OF FERTILITY IN CANADA

GRAPH 9.4



that the proportion of infertile couples varies very considerably, by income, for women aged 20-24, the highest incomes being related to the greatest proportions. A similar relationship is noted amongst women between the ages of 35 and 39, but it is exactly the opposite for women aged between 45 and 49. Furthermore, amongst women over 65, couples with a family income over \$10,000 have much higher parity-progression ratios than do couples whose income is between \$7,000 and \$10,000, which was also observed in the case of the husband's income.

2. THE SPECIFIC INFLUENCE OF INCOME ON FERTILITY

The apparently negative role of income, which seems to stem from the simple analysis just concluded – at least for couples where the woman is over 40 – is an illusion. There is no denying the fact that the fertility of these couples is as low as their income is high (with some exceptions) but this relationship is not due to the income in itself. It is due to the fact that several other characteristics vary at the same time as income, and these characteristics have a depressive effect on fertility, one which is a good deal greater than the *positive* effect played by income. This can be demonstrated by maintaining these characteristics constant and letting

income be the only variable factor. The influence of the husband's income will be analysed first, then that of family income for couples where the wife is gainfully employed. In both these cases, couples where the wife is aged 25-29, 35-39 and 45-49 will be examined.

INFLUENCE OF THE HUSBAND'S INCOME

We will proceed in two phases: first of all, the level of schooling of both spouses will be kept constant, and secondly, the fertility variations by income will be examined for some occupations of the husband. We have translated, in the form of indices, the fertility levels (number of live-born children per married woman) by giving the value 100 to the fertility for the income group of \$5,000 to \$7,000. These indices are presented in Table 9.6, for different combinations of scholastic attainment for husband and wife, for all types of residence as a whole and metropolitan areas, and for three age groups included between the ages of 25 and 50. The arithmetic mean of the indices of each age group for each income category has also been calculated.

It is no easy matter to read the essential data from this table and, therefore, some partial regroupings have been made. Table 9.6 contains one such regrouping, for each age group. For women aged between 25 and 29, the progression of fertility with income is abundantly clear: the index changes from 82 (under \$1,000) to 121 (\$10,000 and over), or an increase of 47.5% in fertility (all types of residence). The increase in fertility is continuous and becomes particularly marked from \$5,000 upwards. The evolution in the fertility pattern in relation to income is not quite so readily ascertainable for the other two age groups: in shifting from the lowest income group, and in following the fertility pattern that accompanies rising income, the fertility line dips then rises again. This rise starts with the \$1,000 to \$3,000 income group, for women in the 35-39 age group; this increase is slow at the start but accelerates; for women aged between 45 and 49, the increase only begins somewhere with the \$3,000 to \$5,000 income group and remains very moderate. The same phenomena are repeated with very little difference in the metropolitan areas. It is not easy to interpret these facts. The positive part played by income in encouraging fertility might be thought of as affecting the younger generation more particularly. This may be the case but a certain reservation should be formulated: it may be that lower income couples are more fertile than are high income couples, after the age of 40, thus compensating at least partially for their sub-fertility prior to the age of 40. This would mean that the former would space out the birth of their children more, but would bear them over a longer period of time.

Table 9.6 – Index of fertility^a variations by annual income of husband, for various combinations of schooling of spouses, for women aged 25-29, 35-39 and 45-49, Canada, for selected types of residence, 1961

(Fertility of \$5,000-\$7,000 income levels = 100)

NOTE: We ignored those cases where less than 50 couples were involved.

Age of woman and level of schooling			Annual income of husband (in thousand dollars)											
Of wife		Of husband	<1	1-3	3-5	5-7	7-10	10+	<1	1-3	3-5	5-7	7-10	10+
25-29 years			All types of residence						Metropolitan areas					
Elementary	–	Elementary	96	94	92	100	98	99	86	79	88	100	103	101
Elementary	–	Secondary	86	92	90	100	106	107	78	82	88	100	106	–
Secondary	–	Elementary	94	94	94	100	101	108	85	92	92	100	107	100
Secondary	–	Secondary	84	90	90	100	104	109	81	80	88	100	106	113
Secondary	–	Some university	49	63	84	100	106	111	–	56	84	100	105	116
Secondary	–	University degree	–	68	84	100	120	131	–	71	84	100	123	142
Some university	–	Secondary	–	89	99	100	95	–	–	–	–	–	–	–
Some university	–	Some university	–	–	77	100	130	–	–	–	–	–	–	–
Some university	–	University degree	–	–	87	100	119	137	–	–	–	100	128	158
University degree	–	University degree	–	87	93	100	137	168	–	–	93	100	144	173
Average 25-29 years			82	85	89	100	112	121	83	77	88	100	115	129
35-39 years														
Elementary	–	Elementary	108	103	95	100	102	105	94	86	94	100	109	99
Elementary	–	Secondary	100	98	96	100	100	99	83	86	94	100	101	91
Elementary	–	Some university	–	–	96	100	111	–	–	–	–	–	–	–
Secondary	–	Elementary	96	99	98	100	98	96	99	88	95	100	99	99
Secondary	–	Secondary	102	93	93	100	100	105	102	93	93	100	100	105
Secondary	–	Some university	–	85	83	100	100	106	–	74	78	100	102	112
Secondary	–	University degree	–	69	94	100	106	120	–	–	92	100	112	126
Some university	–	Secondary	–	85	92	100	98	124	–	–	80	100	105	126
Some university	–	Some university	–	–	101	100	122	125	–	–	116	100	142	135

Some university	-	University degree.....	-	-	91	100	121	131	-	-	-	100	124	144
University degree	-	Secondary	-	-	83	100	122	120	-	-	-	-	-	-
University degree	-	University degree.....	-	-	124	100	116	140	-	-	-	100	124	154
Average 35-39 years			102	90	96	100	108	128	95	85	93	100	112	119
45-49 years														
Elementary	-	Elementary	123	114	99	100	99	99	127	105	104	100	99	103
Elementary	-	Secondary	118	103	102	100	96	99	122	93	103	100	96	98
Secondary	-	Elementary	113	108	100	100	98	97	115	99	101	100	102	86
Secondary	-	Secondary	114	103	98	100	97	96	106	94	93	100	96	98
Secondary	-	Some university	-	92	92	100	95	98	-	83	95	100	102	107
Secondary	-	University degree.....	-	74	94	100	97	109	-	-	86	100	95	109
Some university	-	Secondary	-	89	110	100	111	115	-	-	102	100	113	121
Some university	-	Some university	-	-	82	100	92	98	-	-	-	100	84	78
Some university	-	University degree.....	-	-	-	100	130	124	-	-	-	-	-	-
University degree	-	Secondary	-	-	72	100	112	100	-	-	-	100	122	110
University degree	-	University degree.....	-	-	-	100	93	110	-	-	-	100	93	110
Average 45-49 years			117	98	94	100	102	104	117	95	98	100	100	102

^a Number of live-born children per married woman.

SOURCE: Table J.4 (Appendix).

This is rather improbable and would run counter to the results of a survey recently conducted by Ronald Freedman and Lolagene Coombs, among American couples.⁴ According to the survey, low income couples do not space out the births of their children as do couples with higher incomes. Moreover, it should be remembered that the twelve odd years of fertility left on the average to couples where the wife is between the ages of 35 and 40 do not readily compensate for the differences in fertility noted amongst women under the age of 40. The hypothesis stating that the positive part played by income is a good deal more notable amongst recent generations thus seems more than plausible.

The indices in Table 9.6 can be regrouped according to the scholastic attainment of husband and wife. The results obtained according to the wife's schooling (all types of residence) are given in Table 9.7 and, according to the husband's schooling in Table 9.8. One phenomenon now becomes abundantly clear: fertility patterns respond all the more to income as the schooling level is high, whether that schooling level is that of the husband or of the wife. The explanation seems simple enough: schooling makes

⁴ "Child Spacing and Family Economic Position", in *American Sociological Review*, Vol. 31, No. 5, Oct. 1966, pp. 631-648.

Table 9.7 - Average index of fertility by annual income of husband, for each level of schooling of wife, for women aged 25-29, 35-39 and 45-49, Canada, 1961

(Fertility of \$5,000-\$7,000 income levels = 100)

Age of wife	Wife's schooling	Husband's annual income (in thousand dollars)					
		<1	1-3	3-5	5-7	7-10	10+
25-29 years	Elementary	91	92	91	100	102	103
" "	Secondary	76	79	88	100	108	115
" "	Some university	-	89	88	100	115	137
" "	University degree	-	87	93	100	137	168
35-39 years	Elementary	104	101	96	100	104	102
" "	Secondary	99	87	92	100	101	107
" "	Some university	-	85	95	100	114	127
" "	University degree	-	-	104	100	119	130
45-49 years	Elementary	121	109	101	100	98	99
" "	Secondary	114	94	96	100	97	100
" "	Some university	-	89	96	100	111	112
" "	University degree	-	-	72	100	103	105

SOURCE: Table 9.6.

Table 9.8 - Average index of fertility by annual income of husband, for each level of schooling of husband, for women aged 25-29, 35-39 and 45-49, Canada, 1961

(Fertility of \$5,000-\$7,000 income levels = 100)

Age of wife	Husband's schooling	Husband's annual income (in thousand dollars)					
		<1	1-3	3-5	5-7	7-10	10+
25-29 years	Elementary	95	94	93	100	100	104
" "	Secondary	85	90	93	100	102	108
" "	Some university	49	63	81	100	118	111
" "	University degree	-	78	88	100	125	145
35-39 years	Elementary	102	101	97	100	100	101
" "	Secondary	101	92	91	100	105	112
" "	Some university	-	85	93	100	111	116
" "	University degree	-	69	103	100	114	130
45-49 years	Elementary	118	111	100	100	99	98
" "	Secondary	116	98	96	100	104	103
" "	Some university	-	92	87	100	94	98
" "	University degree	-	74	94	100	107	114

SOURCE: Table 9.6.

couples better able to adjust their family responsibilities to their resources; it favours in them a concern about this adjustment as well as the knowledge of the means required to arrive at their ends. There are several variant patterns from one age group to another. The rise in fertility with income does not always start from the lowest income level. Amongst women aged 35-39 and 45-49 who have not gone beyond high school (or whose husband has not gone beyond that level), one observes at first a drop in fertility as income increases and it is only beyond the \$3,000-\$5,000 group that the relationship between fertility and income becomes positive. The fact that this does not happen in the case of women aged between 25 and 29 indicates that the younger couples, even those with the lowest schooling, do attempt an equilibrium between their incomes and family responsibilities. We are thus left with the clear impression that, within a few years, the positive relationship between these two phenomena will have become quite generalized.

There does not seem to be any major behavioural difference in this respect between the two major cultural groups in Canada, as may be seen from the information in Table 9.9. We have shown the same type of information as in preceding tables, for immigrants, Anglo-Protestants, Anglo-Catholics, and French-Catholics, but for only two combinations of schooling

Table 9.9 – Index of fertility^a variations by annual income of husband, for various combinations of schooling of spouses, for women aged 25-29, 35-39 and 45-49, for selected cultural groups, Canada, 1961

(Fertility of \$5,000-\$7,000 income levels = 100)

NOTE: We ignored those cases where less than 50 couples were involved.

Age of wife	Sub-population	Annual income of husband (in thousand dollars)					
		1	1-3	3-5	5-7	7-10	10+
Wife's schooling: Secondary Husband's schooling: Secondary							
25-29 years	Canada	84	90	90	100	104	109
" "	Immigrant	83	86	87	100	101	110
" "	Anglo-Protestant	87	98	92	100	105	110
" "	Anglo-Catholic	87	91	94	100	105	111
" "	French-Catholic	84	83	85	100	103	104
35-39 years	Canada	102	93	93	100	100	105
" "	Immigrant	74	86	88	100	100	105
" "	Anglo-Protestant	111	97	96	100	101	102
" "	Anglo-Catholic	—	91	94	100	96	110
" "	French-Catholic	100	88	90	100	101	108
45-49 years	Canada	114	103	98	100	97	96
" "	Immigrant	124	101	97	100	104	95
" "	Anglo-Protestant	105	108	103	100	94	95
" "	Anglo-Catholic	133	115	97	100	103	100
" "	French-Catholic	101	82	88	100	103	102
Wife's schooling: Secondary Husband's schooling: University degree							
25-29 years	Canada	—	68	84	100	120	131
" "	Immigrant	—	—	77	100	104	140
" "	Anglo-Protestant	—	67	89	100	125	137
" "	Anglo-Catholic	—	—	—	—	—	—
" "	French-Catholic	—	—	83	100	114	129
35-39 years	Canada	—	69	94	100	106	120
" "	Immigrant	—	—	85	100	98	117
" "	Anglo-Protestant	—	79	117	100	108	120
" "	Anglo-Catholic	—	—	—	100	114	130
" "	French-Catholic	—	—	—	100	109	120
45-49 years	Canada	—	74	94	100	97	109
" "	Immigrant	—	—	89	100	97	122
" "	Anglo-Protestant	—	—	97	100	92	103
" "	Anglo-Catholic	—	—	—	—	—	—
" "	French-Catholic	—	—	—	100	97	109

^a Number of live-born children per woman.

SOURCE: Table J.5 (Appendix).

levels of spouses: namely secondary schooling for both spouses and secondary schooling for the wife whose husband is a university graduate. These are the categories for which information is usually sufficient, despite some numerous instances of missing data. It should be noted that our figures cover those instances where data were available for at least fifty couples, and this leaves the door open to fairly large chance fluctuations. Therefore, too much importance should not be attached to certain exceptional indices. Generally speaking, the movements of fertility for the four cultural groups are the trends noted for the Canadian population as a whole.

The increasing trend of fertility by husband's income can be observed for several occupational groups (Table 9.10). The fertility indices are given for a particular type of residence: the metropolitan areas for most occupations and the rural non-farm environment for the primary sector. No consideration was taken here of the schooling of the spouses. It may be, therefore, that the schooling of one spouse or the other may concur with income – in certain occupational groups, at any rate – and this would tend to attenuate the increase in fertility with income (since improved schooling has a depressive effect on fertility). Nonetheless, that the relationship between income and fertility is a positive one cannot be disputed, in so far as most occupations are concerned, and differences in fertility between lower and higher income levels are sometimes very marked indeed. Clerical employees, for example, find their fertility almost doubled when the woman is between 25 and 29 years of age (74 to 161); the spread is not so great where the woman is between the ages of 35 and 39 (73 to 128) and between 45 and 49 (87 to 143) but it remains more than appreciable. Amongst occupational groups analysed here, the primary sector (farmers and stockraisers, loggers, fishermen) is the only one to register a systematic trend that runs contrary to the trend noted for the other occupations. This is equally true of craftsmen where the wife is between 45 and 49 years of age. This recalls an earlier observation: the positive relation between income and fertility is either not evident or much less evident for the spouses with lowest schooling.

INFLUENCE OF FAMILY INCOME (GAINFULLY EMPLOYED WOMEN)

An analysis of the fertility by family income can be made from those instances where the wife is gainfully employed, by keeping as constant the schooling of both husband and wife. The required data have been collected only for cases where the wife is Protestant, and of English mother tongue, on the one hand, and for those cases where, on the other hand, the wife is of French mother tongue and Catholic. In practice, the small numbe

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Table 9.10 – Index of fertility^a variations by annual income of husband, for selected occupations of husband, for women aged 25-29, 35-39 and 45-49, Canada, for various types of residence, 1961

(Fertility of \$5,000-\$7,000 income levels = 100)

Husband's occupation and type of residence		Annual income of husband (in thousand dollars)				
		1-3	3-5	5-7	7-10	10 +
Women of 25-29 years						
Professional and technical	Metropolitan areas	73	90	100	119	132
Engineers	" "	89	95	100	140	143
Physical scientists	" "	—	91	100	116	156
Physicians and surgeons ..	" "	72	82	100	90	134
Authors and journalists ..	" "	—	78	100	108	122
Clerical	" "	74	86	100	108	161
Commercial travellers	" "	78	96	100	100	116
Salesclerks	" "	80	90	100	110	—
Craftsmen	" "	82	92	100	109	104
Labourers	" "	75	82	100	—	—
Farmers and stockraisers ..	Rural non-farm	117	108	100	118	111
Loggers	" "	108	98	100	—	—
Fishermen	" "	144	142	100	—	—
Women of 35-39 years						
Professional and technical	Metropolitan areas	89	101	100	108	126
Engineers	" "	—	85	100	114	136
Physical scientists	" "	—	—	100	99	116
Physicians and surgeons ..	" "	96	100	100	124	140
Authors and journalists ..	" "	—	69	100	122	117
Clerical	" "	73	85	100	105	128
Commercial travellers	" "	91	94	100	103	118
Salesclerks	" "	71	89	100	97	105
Craftsmen	" "	92	95	100	105	102
Labourers	" "	89	96	100	129	—
Farmers and stockraisers ..	Rural non-farm	97	89	100	83	85
Loggers	" "	128	122	100	—	—
Fishermen	" "	—	—	—	—	—
Women of 45-49 years						
Professional and technical	Metropolitan areas	90	101	100	105	131
Engineers	" "	53	82	100	101	101
Physical scientists	" "	—	105	100	100	107
Physicians and surgeons ..	" "	—	—	100	103	112
Authors and journalists ..	" "	88	86	100	82	100
Clerical	" "	87	95	100	105	143
Commercial travellers	" "	79	103	100	114	108
Salesclerks	" "	103	109	100	130	92
Craftsmen	" "	108	103	100	90	94
Labourers	" "	99	98	100	98	—
Farmers and stockraisers ..	Rural non-farm	93	99	100	102	107
Loggers	" "	151	103	100	—	—
Fishermen	" "	118	126	100	—	—

^a Number of live-born children per woman.

SOURCE: Table J.5 (Appendix).

of couples found in many instances, requires that the study be confined to those couples where husband and wife both had secondary schooling. As may be observed by examining the results which appear in Table 9.11, the predominating trend in fertility is towards a decrease as family income rises. The drop runs close to two-thirds (139 to 44) for the Anglo-Protestants in the 25-29 age group, once income rises from \$1,000-\$3,000 to over \$10,000; it is about a quarter for women aged between 35 and 39, and the pattern is reversed somewhat, though not to any great extent, for women in the 45-49 age group. Comparison with the French-Catholics is somewhat difficult, due to insufficient information. But the variations in fertility follow the same pattern as noted in the case of Anglo-Protestants. It should be noted, however, that the fertility of the French-Catholics aged 45-49 increases a great deal as family income increases.

Table 9.11 – Index of fertility^a variations by annual family income, for couples where both spouses have secondary schooling and women is in labour force, for English-Protestant and French-Catholic women aged 25-29, 35-39 and 45-49, Canada, 1961

(Fertility of \$5,000-\$7,000 income levels = 100)

NOTE: In parentheses: Number of live-born children per woman. We ignored those cases where less than 50 couples were involved.

Age of woman and sub-population ^b	Annual family income (in thousand dollars)				
	1-3	3-5	5-7	7-10	10 +
25-29 years					
Anglo-Protestant.....	139 (1.88)	126 (1.70)	100 (1.35)	50 (.67)	44 (.59)
French-Catholic	—	129 (1.19)	100 (.92)	80 (.74)	—
35-39 years					
Anglo-Protestant.....	99 (2.18)	105 (2.32)	100 (2.21)	88 (1.94)	72 (1.59)
French-Catholic	—	148 (3.14)	100 (2.13)	81 (1.73)	—
45-49 years					
Anglo-Protestant.....	99 (1.82)	101 (1.87)	100 (1.84)	99 (1.83)	105 (1.94)
French-Catholic	—	108 (2.22)	100 (2.05)	130 (2.67)	164 (3.37)

^a Number of live-born children per woman.

^b Only native-born women.

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

How can we explain the marked difference in behaviour patterns between women aged 25-29, 35-39, on the one hand, and the women of 45-49 years, on the other? One may be led to believe that the higher the family income, the more time the woman spends outside the home, on her work.

Now, when a woman is under 40 – and more particularly when she is under 30 – this activity outside her home comes into direct competition with fertility; after the age of 45, this competition is less marked and it may be that because there are several children in the household, and because of the financial burdens which they entail, the woman feels encouraged to seek remunerative employment so as to increase the family's financial resources. The results just established for women under 40 are exactly the opposite of those found for married women as a whole (whether or not gainfully employed), in relation to the husband's income. These gainfully employed young women are probably more emancipated than their elders, freed of the traditional social constraints which circumscribe the role of the married woman and it may be that this emancipation leads at the same time to greater outside activity (and thus a higher income) and a reduced fertility.

3. COMPARISON WITH CHARLES' RESULTS AND WITH THE U.S.A.

COMPARISON WITH ENID CHARLES (1941 Census)

In her study on the fertility of families, from information collected in the 1941 Census, Enid Charles analyses the variations in fertility by income, taking into account schooling, type of residence and ethnic origin.⁵ Table 9.12 is a partial reproduction of the table which constituted the basis of her analysis.⁶ It will be noted that, with one exception, fertility decrea-

⁵ See *The Changing Size of the Family...*, op. cit., p. 105.

⁶ "Other ethnic origins" were excluded.

Table 9.12 – Fertility^a of couples by income^b, by schooling, and by ethnic group of husband, Canada, for selected types of residence, 1941

Type of residence and schooling	British				French			
	\$950	\$950-1,949	\$1,950-2,949	\$2,950+	\$950	\$950-1,949	\$1,950-2,949	\$2,950+
Urban								
0-8 years	3.74	3.22	2.88	2.72	6.44	6.28	5.80	5.12
9-12 years ...	2.88	2.62	2.37	2.24	5.52	4.97	4.69	4.16
13 +	2.54	2.35	2.15	2.10	4.83	4.34	4.28	3.86
Rural								
0-8 years	4.50	3.92	3.39	3.21	7.47	7.26	6.30	6.21
9-12 years	3.45	3.14	2.64	2.60	6.27	5.73	4.92	4.23
13 +	2.95	2.65	2.28	2.33	5.87	5.71	3.28	4.84

^a Number of live-born children per married woman between the ages of 45 and 54.

^b Income of wage-earners only.

SOURCE: Enid Charles: *The Changing Size...*, op. cit., p. 105.

ses with an increase in income. The exception is not particularly significant: it involves rural husbands of French origin who have had more than 13 years of schooling; the number of children increases from 3.28 to 4.84 when the income rises from the level of \$1,950–\$2,949 to over \$2,950. This is no doubt an anomaly due to the small number of couples in these categories. Charles calculated standardized averages for each income category and came up with the following results:

Less than \$950	–	4.43
\$ 950 – \$1,949	–	4.07
1,950 – 2,949	–	3.46
2,950 and over	–	3.30

Thus fertility drops by about a quarter, where the passage is from the lower income to the higher income levels. These results are quite different from those we have already found. A systematic comparison between these results and the results obtained from the 1961 Census, for married women aged between 45 and 49, yields interesting results. In the latter case, therefore, they are the women who are reaching the end of their period of fertility, but who follow the women studied by Charles with an average gap of about 22.5 years. Rigorous comparison is impossible because the 1961 Census data were not presented in the same way as the 1941 Census data: all husbands were included and not merely the wage-earners; the schooling levels were not defined in the same way, as already noted in this paper; instead of rural populations being taken as a whole, only the rural non-farm populations were retained; furthermore, the urban categories used by Enid Charles (cities of 30,000 inhabitants and over) have to be replaced by the (unweighted) average for cities of 30,000 to 100,000 inhabitants and those with over 100,000 inhabitants. Couples where the husband was of French origin will be replaced by couples where the wife is French-Catholic and British couples by couples where the wife is Anglo-Protestant; finally, the way in which the income categories are presented is respected. All these transpositions give the information indicated in Table 9.13.

It is only from moderate income levels that any trend towards a rise in fertility is noted with an increase in income, and this only in certain cases: rural and urban Anglo-Protestants whose husband has had a post-secondary schooling; French-Catholic urban women whose husband has had the same schooling as themselves. However, a systematic trend downwards with increasing income appears only amongst rural Anglo-Protestant women whose husband has had an elementary and secondary schooling and rural French-Catholic women whose husband has had elementary schooling. The positive relationship between fertility and husband's income is less clearly apparent and in a less general manner when the wife's schooling is not taken into account. But even when consideration is given only to

TRENDS AND FACTORS OF FERTILITY IN CANADA

the husband's schooling, it is clear that amongst women who were between 45 and 55 years of age in 1941, and those who were between 45 and 50 years of age in 1961, a major change arose. In the latter instance, the very general negative and relatively strong relationship noted for the former group no longer seems to hold. There now remain but a few instances of this phenomenon which is disappearing, amongst the less well-educated couples and particularly where the incomes are under \$7,000.

Table 9.13 – Fertility^a of married women by annual income and schooling of husband, for English-Protestant and French-Catholic women aged 45-49, Canada, for selected types of residence, 1961

NOTE: We ignored those cases where less than 50 couples were involved.

Types of residence and husband's schooling	Annual income of husband (in thousand dollars)					
	<1	1-3	3-5	5-7	7-10	10+
Anglo-Protestants ^b						
Urban ^c						
Elementary	2.71	2.84	2.64	2.41	2.43	2.35
Secondary	1.96	2.07	2.13	2.15	2.04	2.06
Post-secondary ^d	—	1.97	1.90	2.36	2.09	2.26
Rural non-farm						
Elementary	3.80	3.94	3.48	3.19	3.12	3.73
Secondary	2.88	2.83	2.79	2.50	2.24	2.59
Post-secondary ^d	—	—	2.34	1.98	2.37	2.65
French-Catholics ^b						
Urban ^c						
Elementary	4.18	3.76	3.78	4.40	3.75	4.12
Secondary	3.27	2.62	3.06	3.41	3.67	3.22
Post-secondary ^d	—	—	—	2.78	3.07	3.39
Rural non-farm						
Elementary	5.98	5.90	5.56	5.81	—	—
Secondary	—	4.40	4.82	4.39	—	—
Post-secondary ^d	—	—	—	—	—	—

^a Number of live-born children per woman. ^b Born in Canada. ^c Average of cities of 30,000–100,000 inhabitants and urban areas of over 100,000 inhabitants.

^d Average of the levels "Some university" and "University degree".

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

COMPARISON WITH THE U.S.A. (1960)

In Table 9.14 and Graph 9.5, we have reproduced the number of live-born children per 1,000 married women, by husband's income, from the 1960 US Census data. The data appear separately for urbanized regions and the rural non-farm environment. The resulting picture is far from being a

simple one, variations in fertility in relation to income being very different from one age group to another and rather dissimilar from one type of residence to another. Amongst women under the age of 30, fertility increases regularly with income, but there is a drop beyond \$10,000 or \$15,000 depending on the cases – this can probably be attributed to the length of studies and late marriages of couples who have a very high income. This behaviour is common to urban and rural couples, with the exception of rural women aged between 25 and 29, whose fertility decreases with increasing income up to \$4,000. Moreover, this same negative relationship is observed for all other age groups up to a certain level of income which varies: fertility decreases up to the \$3,000-\$4,000 level for urban women between the ages of 30 and 45; up to \$10,000-\$15,000 for urban women over 45 and rural women between 30 and 50. Beyond these income levels there is found an increase in fertility, although this is not the case amongst rural women over 50 years of age.

Table 9.14 – Number of live-born children per 1,000 married women, by annual income of husband and by age of wife, United States, for selected types of residence, 1960

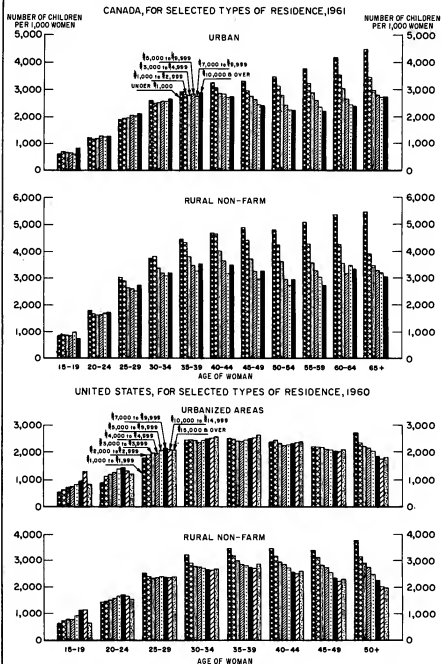
Type of residence and annual income of husband (Income in thousand dollars)	Age of woman (in years)							
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50+
Urbanized areas								
1-2 ^a	576	902	1,809	2,433	2,502	2,380	2,200	2,733
2-3	654	1,132	1,937	2,450	2,494	2,438	2,190	2,355
3-4	722	1,214	1,985	2,429	2,420	2,322	2,192	2,217
4-5	749	1,273	1,976	2,358	2,402	2,250	2,105	2,146
5-7	827	1,402	2,076	2,417	2,440	2,277	2,079	2,020
7-10	953	1,453	2,150	2,509	2,509	2,317	2,021	1,842
10-15	1,301	1,325	2,088	2,526	2,540	2,351	2,022	1,749
15 +	840	1,222	2,075	2,575	2,645	2,402	2,082	1,811
Rural non-farm environment								
1-2 ^a	659	1,443	2,562	3,237	3,486	3,491	3,402	3,749
2-3	764	1,471	2,401	2,923	3,207	3,178	3,131	3,143
3-4	807	1,531	2,345	2,799	3,002	2,971	2,858	2,904
4-5	804	1,588	2,371	2,766	2,863	2,858	2,724	2,756
5-7	920	1,688	2,410	2,725	2,833	2,743	2,547	2,499
7-10	1,130	1,712	2,376	2,691	2,755	2,575	2,342	2,253
10-15	1,133	1,642	2,373	2,652	2,721	2,515	2,213	2,018
15 +	648	1,532	2,392	2,710	2,898	2,626	2,307	1,990

^a Including negative incomes.

SOURCE: US Census of Population, 1960, *Women by Number of Children Ever Born*, Table 37.

GRAPH 9.5

NUMBER OF LIVE-BORN CHILDREN PER 1,000 MARRIED WOMEN BY ANNUAL INCOME OF HUSBAND AND BY AGE OF WIFE:



It would seem that these are the different stages in changes that have arisen in the relationship between fertility and income; first of all, the inverse ratio predominates, and this is still true of rural women over 50 years of age; then changes to a positive relationship above a certain income level – the income level being lower amongst younger women and urban women; finally, it is virtually along the whole income scale that the positive relationship predominates and this is in line with the behaviour of women under 30 in the urban areas and under 25 in the country.

Canada seems less advanced than the United States in this process of inversion in the relation between fertility and income. Graph 9.5 also reproduced the data in Table 9.2, found at the beginning of this chapter, and permits a comparison with the United States. The negative relationship is dominant along almost all of the income scale in the rural farm environment and it is only above a relatively high income (\$10,000 in most cases) that the positive relationship becomes evident. This is also true amongst urban couples where the wife is over 35 years of age. Amongst urban couples where the wife is between 20 and 35 years of age, the positive relation is evident along almost all of the income scale. For women under 20, it is only above the \$10,000 level that fertility increases with income.

CONCLUSION

It seems clear enough that, generally speaking, a positive relationship is being developed between fertility and income. This is already the prevailing relationship amongst young urban couples in Canada today. We have also shown that when one nullifies the influence exercised by other factors which usually vary at the same time as income (schooling, for instance), the positive effect of income on fertility is a good deal more generalized than would seem at first sight. This is probably true amongst couples who are anxious and have the means to adjust their family responsibilities to their resources. It is possible to believe that, within a very few years, most couples in our society will be conducting themselves in accordance with this rationale.

Chapter 10

FERTILITY AND LABOUR FORCE STATUS

From the sample of ever-married women who were asked how many live children they had borne during their lifetime, 22% of those aged between 15 and 65 years were part of the labour force. This meant that during the course of the week preceding the census, these women had worked for remuneration, whatever the length of time of their employment.¹ The participation rate² is a little higher in urban areas (24.1%) than on farms (20.0%) and the latter rate exceeds the rate in the rural non-farm environment (15.4%). The result is that 78.4% of these active women are found in urban areas, 12.0% in rural non-farm environment and 9.6% on farms.

It is important to note that some of these active women can only spend a few hours a week at gainful employment outside the home. It is therefore possible that the very high reduction in fertility that we shall find for active women as a whole is even higher in the case of those who spend a large part of their time in gainful employment outside the home.

The participation rates for married women vary according to their age. These rates will be found in Table 10.1 for "all types of residence", by age groups of five or ten years. The variations in the rate are not very great, however; this rate increases from 24% at 15-19 years to 27% at 20-24 years; the rate for women aged 25-34 is lower (22%) and this no doubt corresponds to the period when children are most in need of care; the rate then increases once again to reach a maximum at 45-54 years (29%), and then decreases.

¹ The definition of the labour force is quite complex. In the case of women, it includes those who have worked for a remuneration, as well as those who have worked in a family enterprise and not been remunerated for this work provided they spent at least 20 hours in the enterprise. For further details, see DBS, *Census of Canada, 1961*, Bulletin 3.1-17, p. 11.

² The participation rate is the fraction of any group which belongs to the active population.

Table 10.1 – Participation rates of women ever married by age group, Canada, 1961

Age of woman	Activity rate	Age of woman	Activity rate
15-19 years.....	24.2%	45-54 years	29.0%
20-24 "	27.4%	55-64 "	20.2%
25-34 "	21.8%	65 years and over.....	4.9%
35-44 "	26.3%		

SOURCE: DBS, *Census of Canada, 1961*, Bulletin 1.3-1, Table 78, and Bulletin 3.1-13, Table 18.

NUMBER OF LIVE-BORN CHILDREN

The examination of the ratios appearing in Table 10.2 will reveal a very great difference in fertility between active and inactive women. These ratios are the fertility quotient of active to inactive women. The number of live-born children per 1,000 women ever married, by age groups and different types of residence are also shown in this table. The study of Graph 10.1, covering the same data, indicates that the absolute differences in the number of live-born children between active and inactive women, increase with age up to 45 years; after that, the absolute differences remain relatively stable, except in the rural farm environment, where these differences decrease. However, the relative differences are generally higher in proportion as the women are young, as can be ascertained by examining the evolution of the ratios in Table 10.2. For "all types of residence", the ratio increases from .389 at 15-19 years to .765 at 60-64 years; this means that, in relation to the fertility of inactive women, that of active women is 61% lower at 15-19 years and 24% lower at 60-64 years. There are two possible explanations for the decrease in fertility differences between active and inactive women, with increasing age: there may be a behavioural difference between women of various generations, but we are inclined to reject this hypothesis. There is another and more likely explanation: as age increases, women who are active at a given age level have benefited from an increasingly longer period during which they were able to stay home and devote themselves to educating their children.

The sub-fertility of active women is higher in urban areas than in the rural non-farm environment and higher in the latter case than for rural women living on farms. In cities of more than 100,000 inhabitants, it varies between 64% (15-19 years) and 24% (55-59 years); in the rural farm environment, the extreme percentages are 42% (15-19 years) and 9% (60-64 years).

Table 10.2 - Number of live-born children per 1,000 women ever married, by age and by labour force status of woman, and ratio of the fertility of women in labour force to that of women not in labour force, Canada, by type of residence, 1961

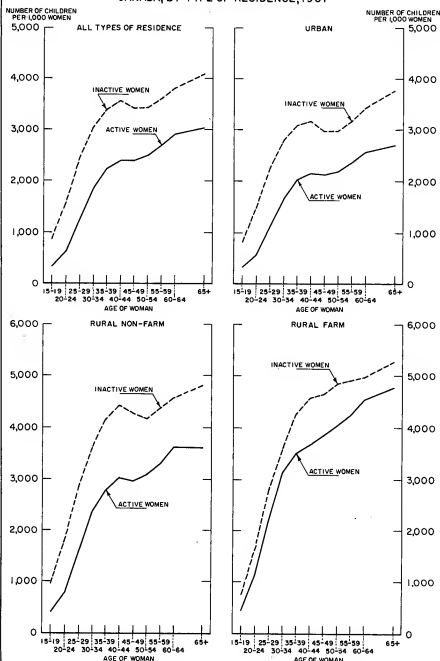
Type of residence and labour force status of woman	Age of woman (in years)										
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All types of residence											
Active	335	625	1,248	1,870	2,229	2,392	2,387	2,488	2,694	2,907	3,026
Inactive	862	1,593	2,438	3,023	3,393	3,553	3,413	3,419	3,600	3,802	4,088
Ratio ^a .....	.389	.392	.512	.619	.657	.673	.699	.728	.748	.765	.740
Urban											
Active	317	573	1,128	1,678	2,013	2,146	2,119	2,191	2,369	2,570	2,692
Inactive	831	1,503	2,267	2,788	3,082	3,158	2,978	2,974	3,166	3,417	3,749
Ratio ^a .....	.382	.381	.498	.602	.653	.680	.712	.737	.748	.752	.718
Cities 100,000+											
Active	295	528	1,022	1,533	1,846	1,972	1,937	1,982	2,179	2,342	2,581
Inactive	812	1,430	2,143	2,616	2,869	2,903	2,687	2,693	2,885	3,105	3,485
Ratio ^a .....	.363	.369	.477	.586	.643	.679	.721	.736	.755	.754	.741
Rural non-farm											
Active	407	797	1,628	2,365	2,799	3,017	2,956	3,093	3,305	3,617	3,606
Inactive	941	1,832	2,897	3,653	4,141	4,414	4,263	4,159	4,372	4,574	4,806
Ratio ^a .....	.432	.435	.562	.647	.676	.684	.693	.744	.756	.791	.750
Rural farm											
Active	444	1,134	2,212	3,132	3,506	3,672	3,854	4,022	4,232	4,535	4,766
Inactive	759	1,648	2,816	3,630	4,249	4,559	4,623	4,833	4,902	4,963	5,246
Ratio ^a .....	.585	.688	.786	.863	.825	.805	.834	.832	.863	.914	.908

^aFertility of active women divided by that of inactive women.

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

GRAPH 10.1

NUMBER OF LIVE-BORN CHILDREN PER 1,000 WOMEN EVER MARRIED,
BY AGE AND BY LABOUR FORCE STATUS OF WOMAN,
CANADA, BY TYPE OF RESIDENCE, 1961



Source: Table 10.2

COMPARISON WITH THE UNITED STATES

We shall limit ourselves to women living in urban areas and to the white population for the United States. Table 10.3 gives the number of live-born children per 1,000 ever-married women, based on 1960 US census figures, for both active and inactive women, by age groups. We have worked out the ratio in the fertility of active to inactive women, as we did for Canada, whose ratios we reproduce anew to facilitate the comparison between the two countries. Indeed, our comparison is not of the strictest accuracy because the urbanized areas, as defined in the US Census, exclude the smaller towns. However, this does not alter the orientation of the conclusions that may be drawn: even if only the cities of more than 100,000 inhabitants in Canada are taken into account, the results of the comparison would still be about the same. In the United States, as in Canada, the ratios increase with the woman's age. In other words, the relative difference in fertility between active and inactive women decreases as the

Table 10.3 – Number of live-born children per 1,000 women ever married, by age and by labour force status of woman, United States (white population) urbanized areas^a, 1960 and ratio of the fertility of women in labour force to that of women not in labour force, United States, 1960, and Canada (urban), 1961

Age of woman	U.S.A. (white population), urbanized areas Number of children per 1,000 women			Canada (urban areas) Ratio ^b
	Active	Inactive	Ratio ^b	
15 - 19 years	425	843	.50	.38
20 - 24 "	705	1,576	.45	.38
25 - 29 "	1,357	2,297	.59	.50
30 - 34 "	1,808	2,670	.68	.60
35 - 39 "	1,949	2,699	.72	.65
40 - 44 "	1,926	2,530	.76	.68
45 - 49 "	1,833	2,267	.81	.71
50 - 54 "	1,841	2,277	.81	.74
55 - 59 " .....				.75
60 - 64 " .....				.75
65 years and over ...				.72

^a The definition of "urbanized areas" differs from urban areas as defined in the Canadian census. According to the 1960 US Census, "urbanized areas" were constituted by the totality of territorial units which corresponded to the following conditions: a city of at least 50,000 inhabitants plus the densely populated territory surrounding it. It follows, therefore, that the "urbanized areas" in the US Census correspond pretty well to the "metropolitan areas" as the term is used in Canada.

^b Fertility of the active women divided by that of the inactive women.

SOURCES: U.S.A. – US Census of Population, 1960, *Women by Number of Children Ever Born*, Table 30. Canada – Table 10.2.

age of women increases: from 50 to 19% in the United States and from 62 to 25% in Canada. The difference in fertility between active and inactive women is therefore much greater for Canadian women than for white US women, particularly among the young women. It is difficult to determine what the reasons are. In any event, we are left with the impression that married women in the United States have been better able to conciliate the requirements of their working lives with those of procreation than have Canadian women. It is noteworthy that, up to the age of 35, active married women in the United States bear more children than do Canadian women in the same situation.

DISTRIBUTION OF WOMEN BY NUMBER OF CHILDREN AND PARITY-PROGRESSION RATIOS

In each type of residence, it is characteristic of the active married women that a greater proportion of them have remained infertile or have only borne one or two children (in contrast to the inactive married women) and also that very few of their number have borne three or more children. As can be seen in Table 10.4, the relative scarcity we have just mentioned is accentuated as the number of children rises. For "all types of residence", one sixth of the active women aged 35-39 had not yet borne any children and an equal fraction had borne only one child. Proportions of the same order will be found amongst older women. The fraction is only slightly higher amongst urban women (one-fifth), but the active rural women have much less often remained childless or borne only one child. It should also be noted that few of the active women living in urban areas, and aged 35-39 have borne more than three children (15.2%) whereas among inactive women, the percentage is twice as high (33.5%). In cities of more than 100,000 inhabitants, the percentages are respectively 12.3 and 29.2.

The parity-progression ratios by birth order are reproduced in Graph 10.2, for active and inactive women aged 35-39 and 65 and over. They are systematically lower amongst active women, for all birth orders, except amongst rural farm women aged over 65, where the parities are almost the same. The spread is higher amongst women aged 35-39 than for the older women.

NUMBER OF CHILDREN UNDER FIVE YEARS OF AGE

The economic activity of married women is frequently haphazard and we may be led to believe that in a way they enter and leave the ranks of the working population to the extent that the procreation and raising of their children allow this freedom. If this is the case, we should find greater differences in the current fertility rates between the active and the inactive

Table 10.4 – Percentage distribution of women ever married by number of live-born children, for women in labour force and women not in labour force, aged 20-24, 35-39, 45-49 and 65 and over, Canada, by type of residence, 1961

Type of residence, age, labour force status of woman	Number of live-born children							
	0	1	2	3	4	5	6	7+
All types of residence								
20-24 years:								
Active	58.2	26.7	10.9	3.2	0.7	0.1	0.1	0.1
Inactive	14.4	37.5	30.1	12.6	4.0	1.0	0.3	0.1
35-39 years:								
Active	17.9	18.1	27.2	17.8	9.6	4.4	2.2	2.8
Inactive	6.3	10.4	22.6	21.8	15.1	9.1	5.5	9.2
45-49 years:								
Active	17.7	18.8	25.4	16.1	9.5	5.1	2.8	4.6
Inactive	11.2	13.6	21.2	17.1	11.4	7.4	5.3	12.8
65 years and over:								
Active	17.5	17.0	18.7	14.3	9.6	7.0	4.6	11.3
Inactive	12.6	11.8	15.3	13.8	11.0	8.2	6.4	20.9
Urban								
20-24 years:								
Active	60.3	26.3	10.1	2.6	0.5	0.0	0.0	0.1
Inactive	15.1	40.2	29.4	11.2	3.1	0.7	0.3	0.0
35-39 years:								
Active	19.6	19.9	28.1	17.2	8.6	3.4	1.6	1.6
Inactive	6.7	11.7	25.0	23.0	14.7	8.3	4.5	6.0
45-49 years:								
Active	19.4	20.6	26.8	15.6	8.7	4.1	2.1	2.7
Inactive	12.3	15.4	23.7	17.8	11.2	6.6	4.4	8.6
65 years and over:								
Active	19.0	18.7	20.0	14.7	9.2	6.1	4.0	8.3
Inactive	13.3	13.1	16.8	14.5	11.1	7.9	6.0	17.3
Cities 100,000								
20-24 years:								
Active	62.4	25.9	9.0	2.3	0.4	0.0	0.0	0.0
Inactive	16.0	42.4	28.4	10.0	2.6	0.4	0.2	0.0
35-39 years:								
Active	21.9	21.3	28.0	16.4	7.4	2.7	1.2	1.0
Inactive	7.3	12.8	27.2	23.5	14.0	7.4	3.6	4.2
45-49 years:								
Active	21.6	22.0	26.8	14.9	7.6	3.4	1.9	1.8
Inactive	13.5	17.0	25.2	18.1	10.7	5.9	3.7	5.9

Table 10.4 – Percentoge distribution of women ever married by number of live-born children, for women in labour force and women not in labour force, aged 20-24, 35-39, 45-49 and 65 and over, Conoda, by type of residence, 1961 – Concluded

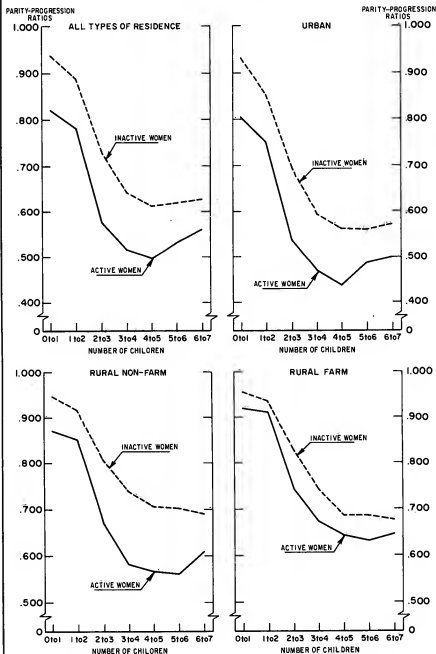
Type of residence, age, labour force status of woman	Number of live-born children							
	0	1	2	3	4	5	6	7+
Cities 100,000+ – Concl.								
65 years and over:								
Active	19.2	20.2	20.3	14.6	8.6	5.9	3.8	7.4
Inactive	13.3	14.2	18.3	15.3	11.3	7.6	5.6	14.4
Rural non-farm								
20-24 years:								
Active	51.4	27.0	14.5	5.5	1.2	0.3	0.1	—
Inactive	11.9	30.9	31.9	16.4	6.3	2.0	0.5	0.2
35-39 years:								
Active	12.9	13.0	24.4	20.8	12.6	7.2	3.6	5.6
Inactive	5.5	7.8	16.9	18.2	15.2	10.8	7.9	17.6
45-49 years:								
Active	14.3	14.6	22.0	18.1	11.1	6.7	4.2	9.0
Inactive	9.9	10.3	16.0	15.1	11.3	8.7	6.9	21.8
65 years and over:								
Active	15.2	12.9	17.0	12.2	11.4	9.4	6.4	15.5
Inactive	12.3	9.2	11.5	11.9	10.2	8.8	7.1	29.0
Rural farm								
20-24 years:								
Active	36.1	32.8	18.5	8.8	2.8	0.4	0.4	0.2
Inactive	15.9	33.1	30.5	13.8	5.0	1.1	0.4	0.2
35-39 years:								
Active	8.1	8.3	21.6	20.3	14.9	9.9	6.0	10.9
Inactive	4.4	6.3	15.5	19.1	17.3	11.8	8.3	17.3
45-49 years:								
Active	8.5	9.4	18.4	17.7	13.9	11.5	6.3	14.3
Inactive	6.8	8.1	15.1	16.4	12.9	10.0	7.4	23.3
65 years and over:								
Active	9.8	9.7	11.7	13.9	10.0	10.0	6.3	28.5
Inactive	6.9	7.9	11.5	12.4	12.0	9.4	8.1	31.8

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

women than in the cumulative rates that the number of live-born children represent. And this is, indeed, the finding. We do not have the current fertility rates for married women by labour force status, but we do have data that come close to them such as the number of children under five years of age, data derived from the census. Children under five years of age are a

GRAPH 10.2a

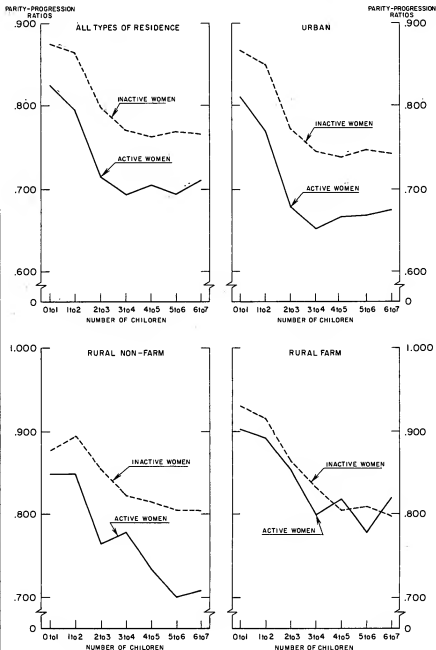
**PARITY-PROGRESSION RATIOS BY LABOUR FORCE STATUS OF WOMAN,
CANADA, BY TYPE OF RESIDENCE, WOMEN EVER MARRIED
AGED 35-39, 1961**



Source: Table 10.4

GRAPH 10.2b

PARITY-PROGRESSION RATIOS BY LABOUR FORCE STATUS OF WOMAN,
CANADA, BY TYPE OF RESIDENCE,
WOMEN EVER MARRIED AGED 65 AND OVER, 1961



Source: Table 10.4

pretty fair indication of the number of births in the five years preceding the census; deceased children cannot count sufficiently enough to invalidate the comparisons. Table 10.5 provides, for different types of residence, the number of children under five years of age who were living with their mother, at the time of the 1961 Census, by age and labour force status of the mother. Although these rates are quite similar to the current fertility rates drawn from vital statistics, they differ from the latter in two respects, apart from the absence of children who died prior to the census: the age of women at the time of the census is not the age they had at the time of birth of their children; moreover, the births are over a five-year period and not for a one-year period as in the case of the customary fertility rates. However, these differences do not affect the comparison between the fertility of active and that of inactive women.

By comparing the ratios which appear in Table 10.5 and those in Table 10.2, we readily find that the ratios in Table 10.5 are a good deal lower than those in Table 10.2, particularly from age 25 onwards. This means that between the active and the inactive women, the fertility differences are much greater in the case of children born over the course of the last five years than when taking into account all children born. For "recent" fertility, the fertility differences are never under 55% for "all types of residence", and never less than 60% for the large cities. It should also be pointed out that the evolution in the ratios of Table 10.5 in regard to the woman's age differs widely from that noted in Table 10.2 for completed fertility. In the case of children born during the last five years, the sub-fertility of active women decreases between 15-19 years of age and 25-29 years of age (as for completed fertility), but increases thereafter. For "all types of residence", "recent" sub-fertility is 64% for the 15-19 age group, 55% for the 25-29 age group and 69% for the 40-44 age group.

VARIATIONS IN SUB-FERTILITY OF THE ACTIVE MARRIED WOMEN

The sub-fertility of active married women, as just observed, seems to prevail amongst all segments of the population, but the degree of its intensity depends upon whether the spouses are well educated or under-educated, on whether their income is high or not, and on whether the wife is Anglo-Protestant or French-Catholic. The data available are not such as to permit a comparison of the fertility of active women with that of inactive women, but we can make a systematic comparison which will come close to doing just that.

We have the two following series of data:

- (a) for all married women without distinguishing between active and inactive: the number of live-born children per 1,000 women by level of schooling of each spouse and by husband's income;

Table 10.5 – Number of children under five years per 1,000 women ever married, by age and by labour force status of women, and ratio of the fertility of women in labour force to that of women not in labour force, Canada, by type of residence, 1961

Type of residence and labour force status of woman	Age of woman (in years)						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
All types of residence							
Active	280.1	503.2	673.5	490.0	270.9	128.9	36.4
Inactive	769.0	1,374.6	1,494.0	1,141.9	757.0	411.1	109.4
Ratio ^a .....	.364	.366	.451	.429	.358	.314	.333
Cities 100,000+							
Active	253.0	426.2	555.8	398.7	207.4	84.1	20.3
Inactive	747.4	1,260.2	1,403.6	1,084.6	683.0	341.0	76.0
Ratio ^a .....	.338	.338	.396	.368	.304	.247	.267
Cities 30,000+							
Active	282.4	497.6	689.7	454.9	242.3	107.8	30.2
Inactive	738.2	1,363.7	1,476.0	1,101.6	707.8	367.5	93.6
Ratio ^a .....	.383	.365	.467	.413	.342	.293	.323
Rural non-farm							
Active	333.3	633.1	834.4	595.8	334.0	184.0	55.2
Inactive	829.1	1,536.4	1,616.0	1,229.6	867.0	515.4	158.5
Ratio ^a .....	.402	.412	.516	.484	.385	.357	.348
Rural farm							
Active	418.0	937.2	1,228.1	959.8	562.1	291.8	90.6
Inactive	654.1	1,431.2	1,651.6	1,268.0	892.3	518.4	159.4
Ratio ^a .....	.639	.655	.744	.757	.630	.563	.568

^a Fertility of active women divided by that of inactive women.

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

(b) in the case of *active married women*: the number of live-born children per 1,000 women, by level of schooling of each spouse and by family income.

In each case, the women are living with their husbands and the data are available for women in three age groups: 25-29 years, 35-39 years and 45-49 years. We shall therefore be forced to compare the fertility of active women with that of all active and inactive women, and this, obviously, attenuates the difference between the active and the inactive women. The data will be found in Table 10.6. In the case of active women, the data are only available for two groups of couples, namely couples where the wife is

Anglo-Protestant or French-Catholic and we shall have to limit our observations to these two groups.

In Columns 3 and 6 in Table 10.6 will be found the ratios of the fertility of all active and inactive women to the fertility of active women; the quotient has been converted to a percentage by multiplying the ratio by 100. These ratios are a type of index as to the excess fertility of all women compared to that of active women; a ratio of 127, for instance, means that the fertility of all women exceeds the fertility of active women by 27%.

Obviously, excess fertility looms larger with a higher income. This should not surprise us, since we have already observed that fertility varies in direct relation to the husband's income in the case of all women, whereas it decreases inversely to family income in the case of active women. Table 10.7 illustrates this phenomenon. There are, however, two exceptions that should be pointed out: excess fertility is higher in the \$1,000-\$3,000 income level than in the \$3,000-\$5,000 income level, except in the case of women aged 25-29 (the first case concerns only couples in which both spouses had solely an elementary schooling); the other exception involves women aged between 45 and 49: excess fertility is a little lower where incomes are over \$10,000 than where incomes range from \$7,000 to \$10,000. Taken as a whole, however, the progression of excess fertility with that of income is very pronounced. The explanation of this general phenomenon is probably that the higher the income, the more important the role of outside work to the active woman, which consequently reduces her fertility.³ The exception pointed out in the case of very low incomes is probably due to the necessity for many women to supplement their husband's quite insufficient income; in so far as the exception concerning women between 45 and 49 years of age, amongst whom there is a much less clearly pronounced progression of excess fertility with income, this exception may be purely accidental.

Let us now examine excess fertility in relation to the woman's schooling. The indices in Table 10.8 provide an answer to this question: these indices represent the arithmetic mean of the indices in Table 10.6 corresponding to each level of schooling for the woman. In working out these average indices, no account was taken of the indices corresponding to the \$1,000-\$3,000 income group, the \$7,000-\$10,000 nor of the \$10,000 plus levels, which are not available for certain schooling levels in order to avoid any bias in the comparisons. The results are very clear: the excess fertility of all active and inactive women (in comparison with active women) is higher amongst women who have only had limited

³It may equally well be concluded that the cause and effect relationship is reversed: it is perhaps because women are not very fertile that they become active outside the home.

Table 10.6 - Number of live-born children per 1,000 married women, by schooling of spouses and income (of husband or of family), for English-Protestant and French-Catholic women aged 25-29, 35-39 and 45-49.

Comparison of the fertility of women in labour force with that of all women (in labour force and not in labour force), Canada, 1961

Characteristics of spouses			Anglo-Protestant ^a			French-Catholic ^a		
Schooling		Income ^c (in thousand dollars)	Number of live-born children per 1,000 women					
of wife	of husband		Active	Active and inactive	Ratio ^b	Active	Active and inactive	Ratio ^b
			1	2	3	4	5	6
WOMEN OF 25-29 YEARS								
Elementary	Elementary	1-3	2,373	3,004	127	1,761	2,762	157
"	"	3-5	2,000	2,882	144	1,486	2,706	182
"	"	5-7	1,547	2,970	192	1,283	2,954	230
"	Secondary	3-5	2,062	2,488	121	1,394	2,161	155
"	"	5-7	1,431	2,491	174	945	2,531	268
Secondary	Elementary	3-5	1,916	2,419	126	1,627	2,342	144
"	"	5-7	1,448	2,618	181	1,376	2,470	180
"	Secondary	3-5	1,695	1,966	116	1,194	1,837	154
"	"	5-7	1,348	2,136	158	923	2,169	235
"	"	7-10	671	2,238	334	741	2,239	302
WOMEN OF 35-39 YEARS								
Elementary	Elementary	1-3	2,516	3,973	158	3,026	4,382	145
"	"	3-5	2,813	3,434	122	2,935	4,183	143
"	"	5-7	2,615	3,297	126	2,930	4,455	152
"	Secondary	3-5	2,316	2,954	128	2,356	3,439	146
"	"	5-7	2,218	2,964	134	2,615	3,759	144
"	"	7-10	2,178	2,689	123	1,769	3,855	218
Secondary	Elementary	3-5	2,374	2,824	119	2,348	3,582	153
"	"	5-7	2,337	2,904	124	2,536	3,834	151
"	Secondary	3-5	2,322	2,473	107	3,140	2,901	92
"	"	5-7	2,206	2,581	117	2,133	3,219	151
"	"	7-10	1,935	2,617	135	1,730	3,236	187

Table 10.6 – Number of live-born children per 1,000 married women, by schooling of spouses and income (of husband or of family), for English-Protestant and French-Catholic women aged 25-29, 35-39 and 45-49.

Comparison of the fertility of women in labour force with that of all women (in labour force and not in labour force), Canada, 1961 – Concluded

Characteristics of spouses			Anglo-Protestant ^a			French-Catholic ^a		
Schooling		Income ^c (in thousand dollars)	Number of live-born children per 1,000 women					
of wife	of husband		Active	Active and inactive	Ratio ^b	Active	Active and inactive	Ratio ^b
			1	2	3	4	5	6
WOMEN AGED 45-49 YEARS								
Elementary	Elementary	1-3	2,702	3,853	143	3,027	4,841	160
"	"	3-5	2,817	3,193	113	3,251	4,308	133
"	"	5-7	2,361	2,980	126	3,044	4,650	153
"	Secondary	3-5	2,010	2,649	132	2,507	3,417	136
"	"	5-7	2,179	2,588	119	2,351	3,607	153
Secondary	Elementary	3-5	2,307	2,552	111	2,418	3,765	156
"	"	5-7	2,066	2,419	117	3,790	4,336	114
"	"	7-10	2,032	2,410	119	2,885	4,095	142
"	Secondary	3-5	1,866	2,191	117	2,220	2,985	134
"	"	5-7	1,844	2,134	116	2,051	3,384	165
"	"	7-10	1,833	2,016	110	2,672	3,482	130
"	"	10+	1,942	2,036	105	3,373	3,440	102

^a Born in Canada.

^b Fertility of active and inactive women divided by the fertility of active women, this quotient being multiplied by 100.

^c Annual income of the husband for all active and inactive women; annual family income in the case of active women.

SOURCE: DBS, Census of Canada, 1961, unpublished table.

Table 10.7 – Index of excess fertility variations of all married women as a ratio of married women in labour force, by income, Canada, 1961

Age of wife and income ^a	Index of excess fertility ^b		
	Anglo-Protestant	French-Catholic	Average
25-29 years:			
1-3	127	157	142
3-5	127	159	143
5-7	176	228	202
7-10	334	302	318
35-39 years:			
1-3	158	145	152
3-5	119	134	126
5-7	125	150	138
7-10	129	202	166
45-49 years:			
1-3	143	160	152
3-5	118	140	129
5-7	120	146	133
7-10	114	136	125

^a Annual income in thousands of dollars. In the case of all active and inactive women, it is the husband's income; in the case of active women, the family income is used.

^b The indices in this table are the arithmetic mean of the indices in Table 10.6 corresponding to the indicated categories of income.

SOURCE: Table 10.6.

Table 10.8 – Index of excess fertility variations of all married women as a ratio of married women in labour force, by schooling of wife, Canada, 1961

Age and schooling of woman	Excess fertility index ^a		
	Anglo-Protestant	French-Catholic	Average
25-29 years:			
Elementary	158	209	184
Secondary	145	178	162
35-39 years:			
Elementary	128	146	137
Secondary	117	137	127
45-49 years:			
Elementary	122	144	133
Secondary	115	142	128

^a The indices in this table are the arithmetic mean of the indices in Table 10.6 corresponding to the indicated levels of schooling. No account has been taken of the \$1,000-\$3,000, \$7,000-\$10,000, or of the \$10,000 and over income levels.

SOURCE: Table 10.6.

schooling than it is amongst women who have reached secondary schooling and this phenomenon is all the more marked that the woman is younger. There is an explanation for this phenomenon: the less educated women tend to bear more children than do women with a longer schooling record. It is quite plausible to conclude, therefore, that, to adapt their fertility to their responsibilities outside the home, the former have been obliged to reduce their fertility to an even greater extent.

The variations in excess fertility by husband's schooling do not seem to follow any set pattern, as shown by results of calculations similar to the preceding ones and which appear in Table 10.9.

Table 10.9 – Index of excess fertility variations of all married women as a ratio of married women in labour force, by schooling of husband, Canada, 1961

Age of woman and husband's schooling	Index of excess fertility ^a		
	Anglo-Protestant	French-Catholic	Average
25-29 years:			
Elementary	161	184	172
Secondary	142	203	172
35-39 years:			
Elementary	123	150	136
Secondary	122	133	128
45-49 years:			
Elementary	117	139	128
Secondary	121	147	134

^a The indices in this table are the arithmetic mean of indices in Table 10.6 corresponding to the schooling levels indicated. No account was taken of the \$1,000-\$3,000, \$7,000-\$10,000, or of the \$10,000 plus income levels.

Finally, we should point out a major difference observed in the three foregoing tables: the difference in fertility between active women on the one hand, and all active and inactive women, is a good deal higher amongst French-Catholics than amongst Anglo-Protestants. If the average for the indices in each column in Table 10.9 is worked out (or in each column in Table 10.8), the figures are 131 for the Anglo-Protestants, 159 for the French-Catholics and 145 for the two groups taken as a whole. This means that excess fertility of all married women in comparison to active women is 31% in the case of Anglo-Protestants and 59% in the case of French-Catholics. This same finding can be expressed in terms of the sub-fertility of active women in relation to all active and inactive women: namely, 24% in the former and 37% in the latter instance. As a whole, the figure is of the order of 30%.

CONCLUSION

There is no denying the fact that work outside the home by married women is related to a major decrease in fertility. There is nothing surprising in this finding for this point is probably but the most obvious aspect of the competition which exists between their children and other objectives which solicit couples and the woman particularly: time. No doubt there are many other aspects to this competition between conflicting objectives, the economic aspect in particular. But, generally speaking, the conflicting drives are not clearly apparent, not even to the couple concerned: probably very few couples make a conscious and deliberate choice between a third child and a second car, and it is very unlikely that a couple sits down to calculate the interest which would accumulate in fifteen years on a capital sum equal to the sum which they would spend, over the same period, on a child. However, the married woman desirous of working outside her home must make a pretty clear choice between the time she is going to devote to educating her children and the time she is going to have to spend outside her home on a job unless, of course, she cannot bear any children.

With an increasing proportion of married women going out to work, it is quite possible that fertility will be reduced, but this is by no means certain. It is equally possible that society will succeed in working out certain arrangements that will permit a greater compatibility between these two poles of attraction in the activity of married women. In the United States, married women's work seems not to have so depressive an influence on fertility as is the case in Canada. United States couples have perhaps worked out solutions that enable married women to conciliate these two roles that they are called upon to exercise.

The scope of the effect brought on fertility by the remunerated work outside the home of married women cannot easily be measured. The data used thus far enable us to measure the past fertility of women, who were active or inactive *at a given time in their lives*. But in trying to precisely assess the effect of their work on the fertility of married women, we would need to consider the number of years of activity and the exact period these years occupied in women's genesic cycle. We do not have these data. However, it may be estimated that if active women between 45-50 years of age experience a fertility that is lower by 30% than that of inactive women in the same age group, this percentage perhaps approximates a measure of the phenomenon in which we are interested. We are inclined to believe that this approximation falls short of the mark. Furthermore, it should be noted that amongst active women aged 45-50, a number have been at work from the very outset of their married lives; others have only gone to work after they have raised and educated their young children. If all of them had worked from the outset of their married lives, the reduction would be much higher.

According to the data we used on the number of children under five years of age per married woman, it can be estimated that in the case of more or less permanent work, the active married women would only bear about half the number of children borne by the women who have remained inactive. Such being the conditions, the possibility that married women might engage more extensively in more or less permanent work might constitute some danger for the renewal of generations.

One important reservation must be expressed however. The considerations expressed above imply that it is the desire to work outside the home that reduces fertility. Now, it is probable that many women go to work because, independently of their own will in the matter, they have remained childless, or have only borne a few children. To the extent that this is true, it cannot be asserted that work outside the home reduces fertility, as the latter would be very low in any case. However, we are inclined to believe that in the majority of cases, it is the desire to work that leads to a reduction in fertility.

Chapter 11

VARIOUS ASPECTS OF CANADIAN FERTILITY

In this chapter, we will gather data and comments on some aspects of fertility that, for a variety of reasons, can only be dealt with, in very summary fashion, in this study. Three aspects will be examined:

1. the intervals between first marriage and first birth as well as those between various birth orders;
2. the evolution in fertility rates by birth order since 1928;
3. illegitimate fertility.

We do not intend treating all of these aspects with equal importance. The birth intervals will be examined more carefully because this part of the study is based on unpublished data taken from the 1961 Census. The other aspects may be of equal interest but will be more briefly dealt with either because the available data are limited, or because they are not fully pertinent to the major topics dealt with in this study.

1. VARIATIONS IN BIRTH INTERVALS

By "birth interval" we mean the time between the first marriage and first birth, or various successive births; in the first instance the interval is of the order 0, the other intervals being similarly characterized by their rank: 1 (between the first and the second birth), 2 (between the second and the third birth), . . . etc. The order of interval therefore corresponds to that of the birth which stands at the beginning of the interval. The intervals from 0 to 9 will be examined in relation to the married woman's age at the time of her marriage, to her age at the time of the 1961 Census as well as to the number of live-children born to each woman. We shall also study, for certain age groups at marriage and in 1961, the variations in birth interval for immigrant women and for three groups of native-born women: Anglo-Protestants, Anglo-Catholics and French-Catholics.

Some comments should be made on the data used to measure the intervals, and more particularly, on the age of the children and on the date of marriage. The census enables us to establish the age of each child in a family (in years) and the number of live-born children to each woman ever married, at least in the case of women who are part of the 20% sample used to gather information about fertility (number of live-born children and date of marriage). To begin with, we had to eliminate all the women ever married for whom the number of live births was not the same as the number of children in the family reported in the census; this was necessary so that the calculations would not be thrown into error either by the number of children who had died or by the number of children who had left home. The measure of the interval between marriage and first birth is based on the date of marriage and the age of the oldest child. Since the date of marriage is not known to the day (marriages were classified by six calendar-month periods) and the age of the children was only given in completed years, the interval between marriage and first birth cannot be estimated without a margin of inaccuracy that may run as high as eighteen months. However, the calculation can be made in such a way that errors of one kind may be compensated by those of another kind. The result is that the average interval is about right, provided the law of large numbers may come into play.

The same problem arises in connection with the intervals of orders 1 to 9, the measurement of which depends on the age of successive children. In this case however, the margin of possible error may run as high as two years. However, once again, the errors of one kind can be compensated by errors of another kind.

We shall examine, first of all, the variations in the intervals by order, for the various possible combinations of age at marriage and age in 1961 (up to 35 years), without taking into account the total number of children born to the same mother. This last factor will be taken into consideration further on.

WOMAN'S AGE AT FIRST MARRIAGE AND HER AGE IN 1961

Table 11.1 provides the length of intervals by order, according to the woman's age at marriage and in 1961. We have left aside women over 35 years of age because, beyond that age, women for whom the number of live births no longer corresponds to the number of children at home become quite numerous. Even if all these cases were systematically set aside, our results might still be selective and therefore, subject to error. The information in Table 11.1 is partially represented in Graph 11.1. All the curves obey a similar, general form: the interval increases in the

Table 11.1 - Average length of birth intervals of orders 0 to 9, by age of women at first marriage and her age in 1961, Canada

(Intervals in years)

NOTE: Except where otherwise indicated, the average intervals in this table represent at least 50 women.

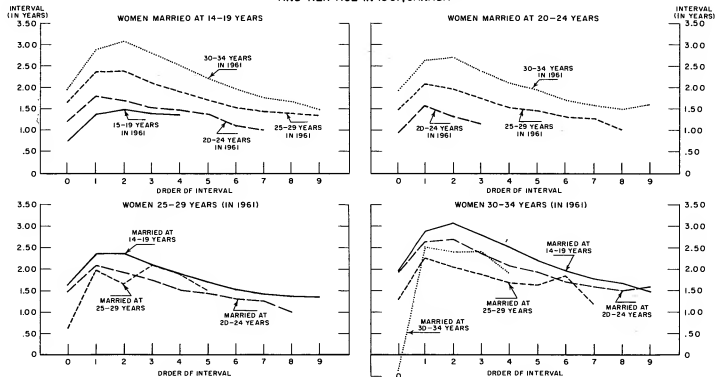
Age at marriage and age in 1961 of women	Order of interval									
	0	1	2	3	4	5	6	7	8	9
Married at 14-19 years:										
15-19 years .....	.71	1.36	1.46	1.36 ^b	1.33 ^a					
20-24 "	1.18	1.80	1.68	1.52	1.46	1.35	1.08 ^c	1.00 ^a		
25-29 "	1.63	2.35	2.37	2.09	1.89	1.70	1.52	1.42	1.36 ^d	1.33 ^a
30-34 "	1.94	2.87	3.06	2.78	2.52	2.20	1.96	1.75	1.66	1.46
Married at 20-24 years:										
20-24 years .....	.93	1.54	1.29	1.13 ^e	1.50 ^a					
25-29 "	1.46	2.07	1.93	1.73	1.51	1.43	1.29 ^f	1.25 ^a	1.00 ^a	
30-34 "	1.92	2.62	2.68	2.36	2.08	1.93	1.69	1.56	1.49	1.58 ^g
Married at 25-29 years:										
25-29 years .....	.62	1.97	1.66	2.07 ^h	1.87 ⁱ	1.50 ^a	1.33 ^a			
30-34 "	1.26	2.24	2.04	1.86	1.67	1.62	1.83 ^j	1.17 ^a		
Married at 30-34 years:										
30-34 years .....	.39	2.51	2.37	2.41 ^k	1.91 ^l	2.83 ^a	1.33 ^a			

^a Less than 10 cases. ^b 11 cases. ^c 13 cases. ^d 44 cases. ^e 45 cases. ^f 41 cases. ^g 26 cases. ^h 46 cases. ⁱ 15 cases. ^j 29 cases. ^k 49 cases. ^l 22 cases.

SOURCE: DBS, Census of Canada, 1961, unpublished table.

GRAPH 11.1

AVERAGE LENGTH OF BIRTH INTERVALS OF ORDERS 0 TO 9, BY AGE OF WOMAN AT FIRST MARRIAGE AND HER AGE IN 1961, CANADA



Source: Table 11.1

transition from order 0 to order 1 or 2, then regularly decreases. The decreasing part of the curve is explained by the fact that as order increases, the women involved are those who have given birth to an ever-increasing number of children. It will be found further on that by taking into account the size of families, this decrease in the interval by order no longer occurs.

The two panels at the top of Graph 11.1 group the curves which correspond to married women between 14 and 20 years of age, and between 20 and 25 years of age, respectively; each curve corresponds to a group of ages in 1961. For a given age at marriage, the intervals are as long as the women are old; the difference runs to half a year from age group to age group, but tends to increase up to the interval corresponding to order 2 and then decreases. This increase in the intervals as age (in 1961) rises, is not surprising: since age at marriage is constant, the duration of marriage is as long as the age of women in 1961 is high. It is therefore normal that the average length of each interval becomes longer as age increases. In the two bottom panels, the curves are grouped according to the age of women in 1961 (25-29 and 30-34 years). It is then found that the intervals are as long as age at marriage is low, except in those instances where age at marriage and age in 1961 fall within the same group. In the latter instances, the interval is longer than what we would expect. It should be noted, in passing, that the interval between marriage and first birth is then strikingly short: six tenths of a year in the case of women aged 25-29 and married while in that age group; the interval is negative (-0.4 years) for those aged 30-34 and married while in that age group. In this latter case, it may be concluded that most women gave birth to one child before marriage.

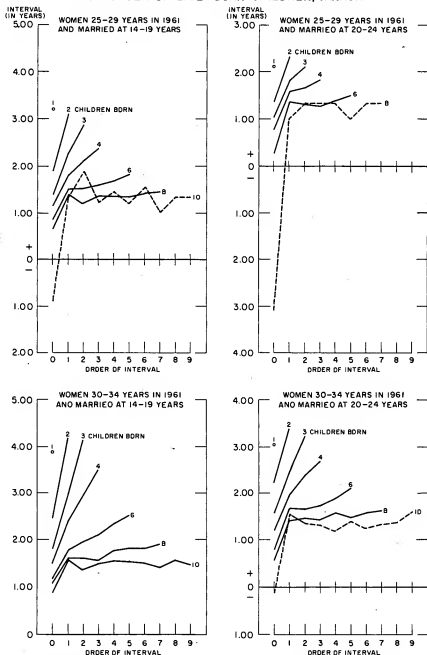
We have examined similar data for each type of residence: no systematic difference shows up.

AGE IN 1961, AGE AT FIRST MARRIAGE AND FAMILY SIZE

We have already pointed out that the consideration of family size changes the shape of the curves representing the length of the interval by order. As the data in Table 11.2 and Graph 11.2 indicate, the interval in this case increases quite sharply between order 0 and order 1, as it did above; but there is no progressive decrease noted in the interval after order 1 or 2. Indeed, the interval increases constantly with order and this increase is all the much higher as the family size is small. In the case of families of 8 to 10 children, the interval is pretty stable from orders 1 to 9, and is at a level varying between 1.3 and 1.7 years, depending on the case. It should be noted, however, that in the case of women aged 30-34, married between the ages of 14 and 19 and who have borne eight children, the length of the interval increases slightly with the order. These women were married, on average, for about fifteen years and this appears to have left a certain free

GRAPH 11.2

AVERAGE LENGTH OF BIRTH INTERVALS OF ORDERS 0 TO 9,
BY AGE OF WOMAN IN 1961, HER AGE AT FIRST MARRIAGE,
AND NUMBER OF LIVE-BORN CHILDREN, CANADA



Source: Table 11.2

**Table 11.2 – Average length of birth intervals of orders 0 to 9,
by age of woman in 1961, her age at first marriage
and number of live-born children, Canada**

(Intervals in years)

NOTE: Except where otherwise indicated, the average intervals in
this table represent at least 50 women.

Age of woman in 1961, age at marriage, number of live-born children	Order of interval									
	0	1	2	3	4	5	6	7	8	9
25-29 years in 1961										
Married at 14-19 years										
1 child	3.22	—	—	—	—	—	—	—	—	—
2 children	1.90	3.11	—	—	—	—	—	—	—	—
3 "	1.40	2.28	2.88	—	—	—	—	—	—	—
4 "	1.16	1.81	2.12	2.38	—	—	—	—	—	—
6 " .....	.85	1.52	1.53	1.59	1.69	1.83	—	—	—	—
8 " .....	.66	1.40	1.22	1.35	1.34	1.33	1.42	1.45	—	—
10 children ^a	—	.89	1.33	1.89	1.22	1.44	1.22	1.56	1.00	1.33
Married at 20-24 years										
1 child	2.11	—	—	—	—	—	—	—	—	—
2 children	1.36	2.32	—	—	—	—	—	—	—	—
3 "	1.03	1.82	2.10	—	—	—	—	—	—	—
4 " .....	.77	1.59	1.65	1.83	—	—	—	—	—	—
6 " .....	.26	1.36	1.32	1.26	1.38	1.49	—	—	—	—
8 children ^b	—	3.08	1.00	1.33	1.33	1.33	1.00	1.33	—	—
10 "	—	—	—	—	—	—	—	—	—	—
30-34 years in 1961										
Married at 14-19 years										
1 child	3.89	—	—	—	—	—	—	—	—	—
2 children	2.45	4.18	—	—	—	—	—	—	—	—
3 "	1.80	2.98	4.13	—	—	—	—	—	—	—
4 "	1.48	2.39	2.95	3.49	—	—	—	—	—	—
6 "	1.16	1.76	1.96	2.10	2.33	2.51	—	—	—	—
8 "	1.07	1.62	1.62	1.54	1.76	1.81	1.81	1.90	—	—
10 " .....	.87	1.56	1.34	1.48	1.53	1.52	1.50	1.40	1.55	1.46
Married at 20-24 years										
1 child	3.64	—	—	—	—	—	—	—	—	—
2 children	2.21	3.38	—	—	—	—	—	—	—	—
3 "	1.57	2.48	3.23	—	—	—	—	—	—	—
4 "	1.22	1.98	2.38	2.69	—	—	—	—	—	—
6 " .....	.78	1.66	1.65	1.72	1.88	2.11	—	—	—	—
8 " .....	.57	1.41	1.45	1.42	1.56	1.49	1.56	1.61	—	—
10 children ^c	—	.15	1.54	1.35	1.31	1.19	1.38	1.23	1.31	1.58

a 9 cases. b 3 cases. c 26 cases.

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

play for voluntary spacing of births, particularly from the fourth child onwards. But, in the case of women who have borne between eight and ten children, the interval is about constant, whatever the order (with the exception, obviously, of the interval between marriage and first birth).

Generally speaking, the following observations may be formulated:

1. For a given order, the interval is as long as the number of children is small.
2. The increase in the length of intervals, with progression in the order, is all the more rapid that the number of children born is lower, and this is probably a result of a voluntary spacing of births.
3. In the case of the four groups of women studied here, the last interval for women who have borne n children is longer than the last interval (higher by one) for women who have had $n+1$ children. There are sometimes exceptions in order 0.

The extreme values are -3.1 years (women aged 25-29, married at 20-24 years, who have borne 8 children, interval of order 0) and 4.2 years (women aged 30-34, married at 14-19 years, who have borne two children, interval of order 1). In the first instance, the duration of marriage was 10 years maximum;¹ it is likely that most of these women bore one or several children before they married. They are not the only ones; we can conclude that in all cases where the interval 0 is under one year, an appreciable proportion of women conceived their child before marriage.

For a given number of live-born children, the intervals of any order whatsoever are as high as the duration of the marriage is long. In this regard, the four groups of women studied fall into the following order (increasing order in length of intervals).

- women aged 25-29, married at 20-24 years;
- " " " " " 14-19 " ;
- " " 30-34, " " 20-24 " ;
- " " " , " " 14-19 " .

There is very little difference, however, between the three groups of women who have borne 10 children.

¹ It may have been 11.5 years in certain cases, taking into account the margin of error in the estimates.

DIFFERENCES BETWEEN CULTURAL GROUPS

In Graph 11.3, we have indicated the length of intervals between orders 0 to 6 for immigrant women and for three groups of native-born women: namely the Anglo-Protestants, the Anglo-Catholics and the French-Catholics. We have considered only the women aged 30-34, married between the ages of 20 and 24 and the women aged 25-29, married between the ages of 14 and 19.² There are few differences between the Anglo-Catholics and the French-Catholics, amongst whom the intervals are not so protracted. Among the Anglo-Protestants, the intervals are systematically longer by about three months. In so far as foreign-born women are concerned, the intervals of low order are longer than is the case amongst women from the three native-born groups, but more like those noted for the Anglo-Catholics and French-Catholics, from order 4 onwards.

VARIATIONS IN INTERVAL FOR ORDER 0

The interval between marriage and first birth presents a particular interest in view of its possible association with pre-marital conceptions. In Table 11.3 and Graph 11.4 will be found the average value for this interval, by age of woman in 1961, her age at first marriage and the number of live children to whom she has given birth. The length of the interval decreases:

- as the number of children born increases, especially in the case of women who have only been married for a short time;
- as the age at marriage is delayed, particularly in the case of women who have borne many children.

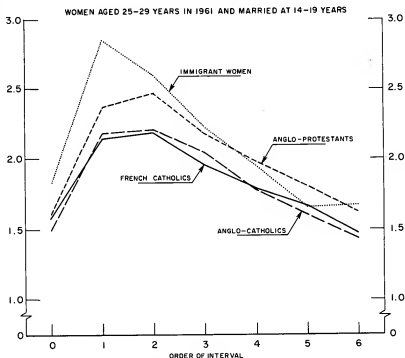
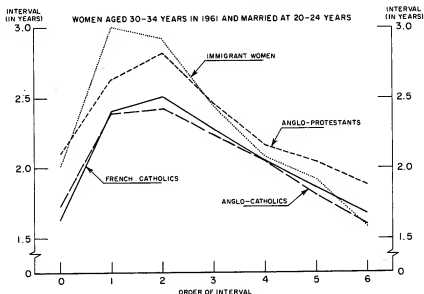
Where the average interval is less than about a year, the probabilities are that most of the women involved conceived their first child before marriage. This is the case amongst women governed by the following conditions:

<u>Age in 1961</u>	<u>Age at marriage</u>	<u>Number of children</u>
30-34 years	14-19 years	10 children
" "	20-24 "	6 and over
" "	25-29 "	3 " "
" "	30-34 "	1 " "
25-29 "	14-19 "	6 " "
" "	20-24 "	4 " "
" "	25-29 "	2 " "
20-24 "	14-19 "	3 " "
" "	20-24 "	2 " "
15-19 "	14-19 "	1 " "

² Each of the average intervals was calculated for at least 50 women; there are exceptions for the interval of order 6 in the case of immigrant women aged 30-34 (40 cases) and for the intervals of orders 5 and 6 of immigrant women aged 25-29 (47 and 15 cases).

GRAPH 11.3

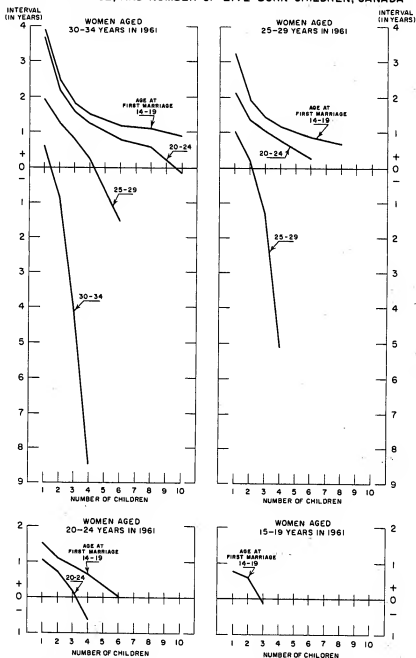
AVERAGE LENGTH OF BIRTH INTERVALS OF ORDERS 0 TO 6, FOR FOUR CULTURAL GROUPS, CANADA, 1961



Source: Unpublished table.

GRAPH 11.4

AVERAGE LENGTH OF THE INTERVAL BETWEEN FIRST MARRIAGE
AND FIRST BIRTH, BY AGE OF WOMAN IN 1961, HER AGE AT
FIRST MARRIAGE, AND NUMBER OF LIVE-BORN CHILDREN, CANADA



Source: Table 11.3

TRENDS AND FACTORS OF FERTILITY IN CANADA

The extreme values for the intervals are 3.9 years and -8.5 years. It would evidently be interesting to know not only the average interval, but the distribution of women by length of interval. Unfortunately, census data, due to characteristic margins of error, do not lend themselves to estimates of this nature.

Table 11.3 – Average length of the interval between first marriage and first birth, by age of woman in 1961, her age at first marriage and number of live-born children, Canada

(Length in years)

Age of woman in 1961 and age at first marriage	Number of live-born children						
	1	2	3	4	6	8	10
30-34 years in 1961							
Married at 14-19 years	3.89	2.45	1.80	1.48	1.16	1.07	.87
“ “ 20-24 “	3.64	2.21	1.57	1.22	.78	.57	-.15 ^a
“ “ 25-29 “	1.93	1.25	.79	.22	-1.54	—	—
“ “ 30-34 “ .....	.60	-0.86	-4.10	-8.47 ^b	—	—	—
25-29 years in 1961							
Married at 14-19 years	3.22	1.90	1.40	1.16	.85	.66	—
“ “ 20-24 “	2.11	1.36	1.03	.77	.26	—	—
“ “ 25-29 “	1.02	.19	-1.33	-5.10 ^c	—	—	—
20-24 years in 1961							
Married at 14-19 years	1.50	1.10	.88	.66	.01	—	—
“ “ 20-24 “	1.05	.71	.18	-.64 ^d	—	—	—
15-19 years in 1961							
Married at 14-19 years .....	.77	.59	-.13	—	—	—	—

^a 26 cases. ^b 27 cases. ^c 31 cases. ^d 39 cases.

SOURCE: DBS, *Census of Canada, 1961*, unpublished table.

2. FERTILITY RATES BY BIRTH ORDER

We shall first of all study general fertility rates by birth order, for the years 1928 to 1965. We shall then examine fertility rates by birth order and age groups in 1961.

GENERAL FERTILITY RATES BY BIRTH ORDER, 1928-1965

It should be remembered, first of all, that a general fertility rate is the ratio of births in a year to all women between 15 and 49 years of age (or 44 years), as opposed to age-specific birth rates; when the term “fertility rate” is used without qualification, it describes the rate for women of

"all marital" status, as opposed to legitimate or illegitimate fertility rates. Prior to 1944, the classification of births in vital statistics was not such that the general fertility rate by birth order could be worked out with any degree of exactitude: birth statistics which comprise a classification by birth order only involve legitimate births, but include legitimate stillbirths, without it being possible to differentiate the latter from the former. The statistics must then be used as they are. From 1944 onwards, the rate can be calculated correctly. It would not appear that the inevitable anomaly for the years 1928-1943 introduces any major error: the rates in Table 11.4 or the curves in Graph 11.5 are not characterized by any break between 1943 and 1944. A study of the curves in Graph 11.5 leads to the following conclusions:

1. Fluctuations in the rates are lesser as the order is greater.
2. A recovery in fertility is noted from 1934 for births in order 1, but only from 1937 for those in order 2, from 1938 for order 3, from 1940 for order 4 . . . , etc. These spreads are easily explained: if, in a given year, there are few births in order X , there will normally be few in order $X + 1$ two years later, that is to say after the lapse of a normal interval separating births in order X from those in order $X + 1$.
3. The recovery in fertility is all the more pronounced as the order is low and the maximum reached earlier in the lower than in the higher orders. Here is the relative percentage increase in the rates for each order:

Order	Years of maximum and minimum rates	% increase in rates
1	1933 - 1947	112%
2	1936 - 1954 ³	89%
3	1937 - 1957	102%
4	1939 - 1959	93%
5	1941 - 1959	68%
6	1941 - 1957	44%
7	1944 - 1957	26%

The increases in the higher orders are negligible.

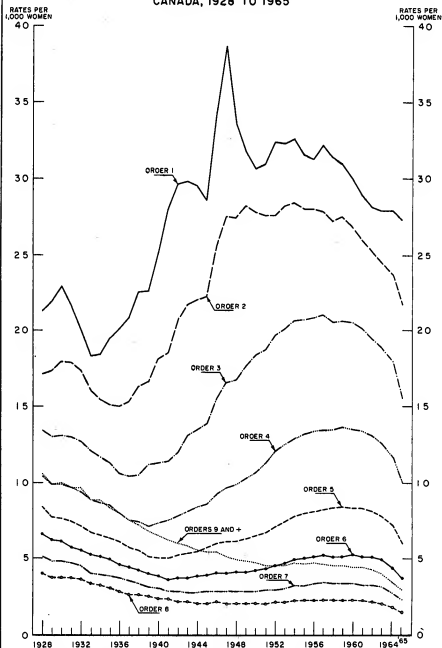
4. The rates in orders 1 and 2 have again started to drop by 1955, and at an ever-accelerated rate; the drop only affects births in orders higher than 3 some years later.

A thorough study of the recent evolution in fertility rates by birth order would perhaps throw some light on the very rapid drop in period fertility rates observed over the past few years, in Canada as in the United

³ The maximum is almost reached in 1949.

GRAPH 11.5

GENERAL FERTILITY RATE BY BIRTH ORDER, CANADA, 1928 TO 1965



Source: Table 11.4

Table 11.4 - General^a fertility rate by birth order,
Canada,^b 1928 to 1965

(Rates per 1,000 women)

Year	Birth order								
	1	2	3	4	5	6	7	8	9+
1928	21.3	17.1	13.4	10.4	8.4	6.6	5.1	4.0	10.6
1929	21.9	17.3	13.0	9.9	7.7	6.2	4.8	3.7	9.9
1930	22.9	17.9	13.1	9.9	7.6	6.1	4.8	3.7	10.0
1931	21.6	17.8	13.0	9.7	7.4	5.7	4.7	3.7	9.7
1932	20.0	17.3	12.7	9.4	7.1	5.5	4.5	3.6	9.7
1933	18.3	16.0	12.1	8.9	6.7	5.2	4.0	3.3	8.9
1934	18.4	15.4	11.7	8.7	6.5	5.1	3.9	3.2	8.9
1935	19.5	15.1	11.3	8.5	6.3	4.9	3.8	3.0	8.3
1936	20.1	15.0	10.6	8.0	6.1	4.6	3.7	2.8	8.0
1937	20.8	15.3	10.4	7.5	5.7	4.4	3.5	2.6	7.5
1938	22.5	16.3	10.5	7.4	5.5	4.2	3.3	2.6	7.2
1939	22.6	16.6	10.7	7.1	5.1	4.0	3.1	2.5	6.8
1940	25.1	18.1	11.3	7.3	5.0	3.8	3.0	2.3	6.5
1941	28.0	18.5	11.4	7.5	5.0	3.6	2.8	2.3	6.2
1942	29.6	20.6	12.0	7.8	5.2	3.7	2.8	2.1	6.0
1943	29.8	21.7	13.1	8.1	5.3	3.7	2.7	2.1	5.8
1944	29.5	22.0	13.5	8.4	5.4	3.8	2.7	2.0	5.5
1945	28.6	22.2	13.9	8.6	5.7	3.9	2.8	2.0	5.4
1946	34.3	25.6	15.5	9.3	6.0	4.0	2.8	2.1	5.4
1947	38.7	27.5	16.5	9.7	6.1	4.0	2.8	2.0	5.1
1948	33.6	27.4	16.7	9.9	6.1	4.1	2.8	2.0	4.9
1949	31.7	28.2	17.6	10.3	6.3	4.1	2.8	2.0	4.8
1950	30.6	27.8	18.3	10.7	6.5	4.2	2.8	2.0	4.7
1951	30.9	27.6	18.7	11.3	6.7	4.3	2.9	2.0	4.5
1952	32.3	27.6	19.7	12.1	7.1	4.5	2.9	2.1	4.5
1953	32.2	28.2	20.1	12.5	7.4	4.7	3.0	2.1	4.5
1954	32.5	28.4	20.6	12.9	7.8	4.9	3.2	2.2	4.7
1955	31.5	28.0	20.7	13.2	8.0	5.0	3.2	2.2	4.6
1956	31.2	28.0	20.8	13.4	8.1	5.1	3.3	2.2	4.7
1957	32.1	27.8	21.0	13.5	8.2	5.2	3.4	2.2	4.6
1958	31.3	27.2	20.5	13.5	8.3	5.1	3.3	2.2	4.5
1959	30.9	27.5	20.6	13.7	8.4	5.1	3.3	2.2	4.5
1960	29.9	26.8	20.5	13.5	8.3	5.2	3.3	2.2	4.4
1961	28.9	25.9	20.1	13.4	8.3	5.1	3.2	2.2	4.4
1962	28.1	25.2	19.4	13.1	8.1	5.1	3.2	2.1	4.2
1963	27.9	24.5	18.9	12.6	7.8	4.9	3.1	2.0	4.0
1964	27.9	23.7	17.9	11.7	7.2	4.4	2.7	1.8	3.4
1965	27.3	21.7	15.5	10.0	6.0	3.7	2.3	1.5	2.9

^a Annual number of live births in each order divided by the number of women aged 15-49. Before 1944, we had to use the number of legitimate live births and stillbirths.

^b The Yukon and Northwest Territories are excluded up to the year 1955; Newfoundland is excluded for all years.

SOURCES: Births: DBS, *Vital Statistics*, years 1928-1965. Population: DBS, *Census of Canada and Population Estimates*, different years.

States. A study of this nature would, however, be beyond the scope of this monograph.⁴

FERTILITY RATES BY BIRTH ORDER AND BY AGE GROUPS

As may be expected, the fertility corresponding to various birth orders is not distributed along the same lines depending on the mother's age. In Table 11.5 and Graph 11.6 will be found the fertility rates for Canada (excluding Newfoundland) in 1961, by birth order and mother's age (by five-year age groups). For births of the first two orders, the women aged 20-24 have the highest fertility rate, concentration in this age group being very marked: about half the births in order 1 and four tenths of the births in order 2 occur within this age group. As the order increases, there is a spreading out amongst the various age groups, the maximum rate occurring at a higher and higher age without, nonetheless, going beyond 35-39 years (order 9 and over).

⁴ It should be pointed out, however, that to interpret the recent evolution in fertility correctly, it would be most useful to know births by their order and by duration of marriage. From this viewpoint, Canada trails far behind many European countries, and this is a deplorable situation.

**Table 11.5 - Fertility^a rates by birth order and by age
of mother, Canada,^b 1961**
(Rates per 1,000 women)

Age of mother	Birth order								
	1	2	3	4	5	6	7	8	9+
15-19 years	42.5	12.7	2.4	0.4	0.0	0.0	0.0	0.0	0.0
20-24 "	94.4	76.5	39.2	15.8	5.6	1.7	0.4	0.1	0.0
25-29 "	39.4	56.6	51.9	33.4	18.9	10.0	5.0	2.4	1.6
30-34 "	13.7	23.6	30.5	26.1	17.9	11.9	7.9	5.4	7.7
35-39 "	4.8	8.1	12.5	13.1	11.2	8.4	6.1	4.8	12.1
40-44 "	1.2	1.9	2.9	3.5	3.7	2.8	2.5	2.2	7.8
45-49 "	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	1.0

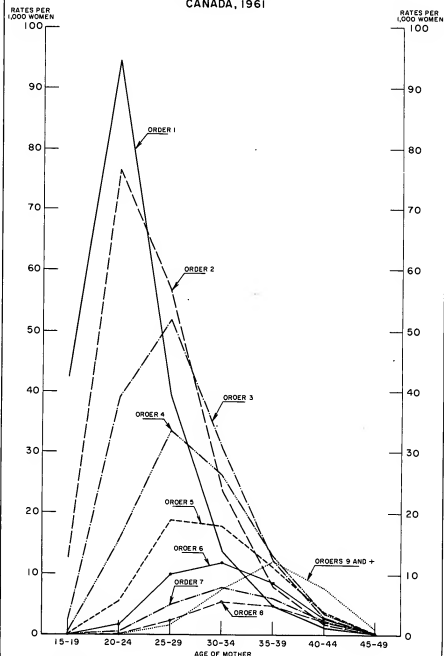
^a Annual number of births in a given order amongst mothers of specified age, divided by the number of women of that age.

^b Except Newfoundland.

SOURCES: Births: DBS, *Vital Statistics, 1961*, Table B11. Population: DBS, *Census of Canada, 1961*, Bulletin 1.2-2, Table 20.

GRAPH 11.6

FERTILITY RATES BY BIRTH ORDER AND BY AGE OF MOTHER, CANADA, 1961



Source: Table 11.5

3. ILLEGITIMATE BIRTHS

EVOLUTION FROM 1921 TO 1965

Illegitimate births are relatively few in number in Canada. In 1965, 28,078 illegitimate births were recorded which represents 6.7% of live births. This percentage is more than three times the percentage noted over the course of the period from 1921 to 1925 (2.2%). It is slightly less than in the United States in 1965 (7.7%) but is quite a bit more than for the white US population (4.0%). The percentage represented by illegitimate births, in relation to all live births for Canada, is given in Table 11.6, for the years

Table 11.6 – Illegitimate births as a percentage of total live births, Canada,^a 1921 to 1965

Year	%	Year	%	Year	%
1921-1925	2.2	1944	4.2	1955	3.8
1926-1930	3.0	1945	4.5	1956	3.9
1931-1935	3.6	1946	4.1	1957	4.0
1936	3.9	1947	4.0	1958	4.0
1937	3.9	1948	4.3	1959	4.2
1938	4.0	1949	3.9	1960	4.3
1939	3.9	1950	3.9	1961	4.5
1940	3.9	1951	3.8	1962	4.8
1941	4.0	1952	3.8	1963	5.3
1942	4.1	1953	3.8	1964	5.9
1943	4.1	1954	3.9	1965	6.7

^a Québec is excluded for the years 1921-1925.

SOURCE: DBS, *Vital Statistics, 1965*, Table B8.

1921-1965. It is important to note that the definition of illegitimate births is not the same for all the provinces. In all the provinces except Ontario, an illegitimate birth is that of a child whose parents are not married to one another;⁵ in Ontario, only those births where the mother is not married have been treated as illegitimate births since 1949. The percentage of illegitimate births remained about the same between 1936 and 1958, except for the marked rise in the years 1944 and 1945, due to the fact that a great many couples were separated at the end of the last war. However, there has been a marked increase since 1958 (from 4.0 to 6.7). All the provinces share in this increase; in 1965, except for Newfoundland and Prince Edward Island, all provinces reached their highest percentage of illegitimate births.

⁵ That is to say that a birth is illegitimate, even if the mother is married, where the child's father is not the mother's husband.

It should be stated, at the outset, that these percentages are a very crude and frequently misleading index of the fertility of unmarried women. If, for instance, the fertility of all women (married and unmarried) diminishes while the percentage of illegitimate births remains stable, it is probable that the fertility of unmarried women has decreased as well. But we must reckon with another factor as well: nuptiality. It is obvious that if the ratio of married women increases, particularly before the age of 30, a reduction in the percentage of illegitimate births can be expected, unless the fertility of unmarried women increases proportionately. To get a better idea of the change in the behaviour of unmarried women, we shall therefore calculate the illegitimate fertility rates by age groups, by relating to the number of unmarried women in a given age group the number of illegitimate births where the mother belongs to the same age group. These rates will be found in Table 11.7, for Canada and for the years 1921, 1931, 1941, 1951 and 1961. They are reproduced in Graph 11.7.

**Table 11.7 – Illegitimate age-specific fertility rates, Canada,^a
1921, 1931, 1941, 1951 and 1961**
(Rates per 1,000 unmarried women)

Year.	Age of mother (in years)						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1921	5.9	10.1	7.1	5.9	3.5	1.4	0.3
1931	6.6	11.1	8.8	6.7	5.0	1.7	0.2
1941	5.8	12.8	11.1	7.7	5.8	2.3	0.3
1951	9.8	19.7	19.2	13.5	7.8	2.6	0.3
1961	12.7	29.5	31.2	22.9	12.9	4.1	0.2
% increase from 1921 to 1961	115	192	339	288	269	193	-21 ^b

^a Except Newfoundland.

^b An extra decimal was used to calculate this percentage.

SOURCES: DBS, *Census of Canada* and *Vital Statistics* for the years concerned. For 1921, the share of illegitimate births for Québec was estimated (see Appendix C).

There is no doubt that illegitimate fertility has considerably increased since 1921 and more particularly since 1941—indeed doubled or tripled for all age groups between 1941 and 1961, except over 40 years of age. It is in the 25-29 age group that the increase is highest: 339%, as may be seen in the last line of Table 11.7. Next, and in decreasing order, come the 30-34, 35-39, 40-44, 20-24, and finally 15-19 years; there is a reduction in illegitimate fertility of women aged 45-49. In 1961, of one hundred unmarried

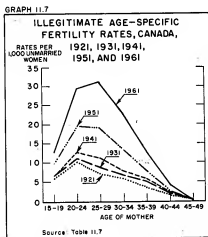
TRENDS AND FACTORS OF FERTILITY IN CANADA

women between 20 and 30 years of age, three had borne one child. Some over-all idea of illegitimate fertility can be worked out as follows:

By adding the rates for each age,⁶ one finds the number of illegitimate children that on the average, during her lifetime, a woman living outside of the married state, and behaving as the average unmarried woman, would have borne. The calculation gives the following results:

1921 - 0.17 children	1951 - 0.36 children
1931 - 0.20 "	1961 - 0.57 "
1941 - 0.23 "	

The increase between 1941 and 1951 and from 1951 to 1961 was considerable and it would be interesting to discover the causes. The question might indeed be put as to whether these are "accidents" which have arisen due to inadequate vigilance or whether, in certain instances at least, the trend is not deliberately away from the traditional patterns that have governed sexual relations, the procreation and raising of children in our society. In any event, the increase in illegitimate fertility is more attributable to women aged 20-40 years than to young girls. Obviously, this cannot only be due to carelessness for which there are more opportunities today than was the case in earlier times.



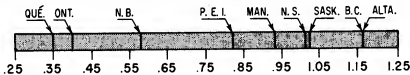
⁶ That is to say by multiplying by 5 the sum total of the rates for the seven age groups.

DIFFERENCE BETWEEN PROVINCES

There was more difference between provinces in 1961 than between the years 1921 and 1961 for Canada as a whole. Table 11.8 and Graph 11.8 give the illegitimate fertility rates by mother's age for each province. There is no need to dwell upon the extent of the differences. The ratio is 1 to 3.4 between the maximum rate for Québec and the maximum rate for British Columbia. The following is the sum of age-specific fertility rates:

Alberta	1.16 children	Manitoba	.93 child
British Columbia	1.16 "	Prince Edward Island	.82 "
Saskatchewan	1.02 "	New Brunswick	.58 "
Nova Scotia	1.01 "	Ontario	.40 "
		Québec	.35 "

These results are illustrated in the following diagram:



The way in which the provinces are regrouped is rather surprising. Three provinces stand markedly apart from the rest, although there seems no kinship amongst them. If it is not too surprising to find Québec and New Brunswick with the lowest rates, it is rather difficult to understand the position of Ontario between these two provinces. No doubt the particular definition of illegitimate births in Ontario leads to an underevaluation of

Table 11.8 - Illegitimate age-specific fertility rates,
Canada and provinces, 1961

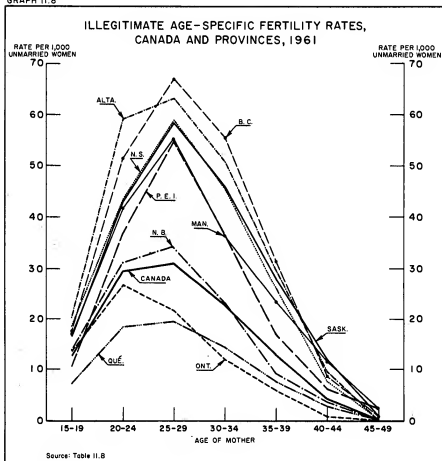
Region	Age of mother (in years)						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Canada	12.7	29.5	31.2	22.9	12.9	4.1	0.2
Prince Edward Island	10.7	37.0	54.7	36.6	17.2	6.2	2.4 ^a
Nova Scotia	18.5	44.3	59.0	45.6	26.1	7.4	0.3
New Brunswick	13.9	31.2	34.3	23.2	9.1	3.6	0.0
Québec	7.1	18.5	19.6	14.5	7.7	2.7	0.2
Ontario	13.6	26.8	21.7	12.1	5.9	0.8	0.0
Manitoba	17.0	41.8	55.3	36.4	23.4	11.4	2.4
Saskatchewan	16.7	43.2	58.4	45.9	28.0	11.8	0.9
Alberta	20.2	59.2	63.2	50.7	29.6	9.4	0.0
British Columbia	17.6	51.4	66.9	55.4	31.4	8.5	0.8

^a One illegitimate birth per 409 unmarried women.

SOURCES: DBS, *Census of Canada, 1961*, Bulletin 1.3-1 and *Vital Statistics*, unpublished data.

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GRAPH 11.8



the rates; yet, this does not seem to be a sufficiently good explanation for the low level of illegitimate fertility. Two other points should be noted: first of all, in those provinces where illegitimate fertility runs at a high level, the maximum rate occurs at 25-29 years, whereas in Ontario and Québec, the rate for the 20-24 age group is, if not higher than that of the 25-29 age group, at least of comparable value. In the second place, there seems to be no link between the greater or lesser degree of urbanization in the provinces concerned and the level of illegitimate fertility.

ILLEGITIMATE FERTILITY OF THE MAIN ETHNIC GROUPS

We know the distribution of illegitimate births by the mother's ethnic origin up to 1951,⁷ but these births are not distributed by age of mother. We can only calculate, therefore, general fertility rates, that is to say the ratio of the annual number of illegitimate births to the number of unmarried women between 15 and 44 years of age. These are the fertility rates that will be found in Table 11.9, for fourteen of the main ethnic groups. There are two reservations to be formulated about the validity of these rates: (1) we cannot be sure that the women gave their ethnic origin in exactly the same way in the census as when they registered the births of their children; (2) an appreciable proportion of illegitimate births could not be classified by ethnic origin: between 3.2% and 14.8% depending on the years and this may more considerably affect the figures for the less important groups.

Table 11.9 – Ratio of illegitimate births to non-married women aged 15-44, by ethnic origin, Canada,^a 1931, 1941 and 1951

(Rates per 1,000 unmarried women)

NOTE: The calculation of these rates is subject to error due to the illegitimate births for which the mother's ethnic origin is unknown: they represent 14.8% of the illegitimate births in 1931, 5.4% in 1941 and 3.2% in 1951.

Ethnic origin	1931	1941	1951
German	7.1	6.7	11.1
British	6.5	7.5	12.1
English	7.3	7.9	—
Scottish	6.0	6.6	—
Irish	5.7	7.6	—
Chinese and Japanese	1.4	2.4	5.5
French	5.4	6.8	9.7
Dutch	5.1	7.2	12.0
Hungarian	18.9	6.2	10.2
Italian	5.0	4.1	5.9
Jewish	0.6	0.6	4.3
Polish	13.1	9.8	11.1
Russian	5.1	8.0	13.5
Scandinavian	7.5	8.1	13.2
Ukrainian	12.8	9.7	12.8
All origins	7.8	7.5	12.7

^a Except Newfoundland.

SOURCES: DBS, *Census of Canada* and *Vital Statistics*, years indicated.

⁷ Vital statistics ceased to classify births by this characteristic in 1952. If serious objections can be formulated in regard to the significance of this characteristic, it is a pity that a new classification, by mother tongue, for instance, has not been introduced in its place.

Now that these observations are made, it would seem that there has been an increase in illegitimacy rates among all ethnic groups between 1931 and 1951, except for Hungarians (whose rates were very high in 1931) and Poles. In 1951, the ethnic groups characterized by a high illegitimate birth rate were, in decreasing order, the Russians, Scandinavians, Ukrainians, British and Dutch. At the opposite end are the Jewish, Chinese, Japanese and Italians (in increasing order).

Chapter 12

OVERVIEW AND CONCLUSIONS

HISTORIC EVOLUTION

The information available, the estimates based on that information all seem to indicate that, in Canada, until 1871, the fertility of couples continued on the same high level as was already estimated for Canadian couples in the eighteenth century. This level corresponded to an average number of children slightly higher than eight, for women who survived until the end of their fertility period. It can therefore be assumed that the generations of women born until 1825 (who bore the last of their children around 1871), were not affected by voluntary infertility. On the other hand, it may equally be concluded that the women belonging to the generation of 1825 were the last (or just about) to follow this pattern of behaviour. Indeed, legitimate fertility must have dropped shortly after 1871 since the decline was already around 20% by 1891 (consult Table 3.1). The drop in the fertility of couples continued after 1891, but seems to have slowed down initially (a reduction of about 10% between 1891 and 1911) only to resume at an accelerated rate later: 18% between 1911 and 1921, 14% between 1921 and 1931 and 12% between 1931 and 1941. In this latter year, the rates of legitimate fertility (period) corresponded to a reduction of about 60% by comparison with the 1871 level. By that time, Canada had just gone through the years during which fertility had been at its lowest. There was some recovery in the fertility of couples after 1941, but this recovery proved low and amounted to slightly over 4% between 1941 and 1951 and to less than 1% between 1951 and 1961.

One has cause to be surprised by the small decline in legitimate fertility between 1891 and 1911. This phenomenon is perhaps due to the arrival of heavy quotas of immigrants about that time, and probably there was high fertility amongst many of them. This hypothesis is perhaps confirmed by the observation that in Nova Scotia, a province which probably did not attract

many immigrants, this slowing down of the drop in legitimate fertility is not noted.

To date, we have only stressed period measures of fertility. The question may be put as to whether these results fall into line with the 1941 and 1961 Census data on the number of live-born children to women ever married by age at the time of the census. We know that these data bear some relation to cohort fertility rates, that is to say to the number of children borne over the course of their life by women born within such and such a period. The oldest generations to which we can refer back, when using these data, are those of women who were over 65 years of age in 1941. Since their average age was then around 74, it can be accepted that this group of women as a whole, corresponds pretty well to the generation born in 1867. On average, they had given birth to 4.8 children.¹ What reduction does this represent as compared to the fertility of women belonging to the generation of 1825 who married and about whom we stated they had borne around eight children each? This last estimate must be justified first.

What we do know is that, from our own evaluations, the age-specific legitimate fertility rates were about the same, in 1871 and in 1851, as those which had been worked out for Canadians in the eighteenth century. But the number of live-born children per ever-married woman also depends on the age of those women at the time they married, and on the fraction of those whose marriages had terminated before they reached their fiftieth year. One can get some idea of these two phenomena by using the fraction representing married women, at various ages (Appendix D). Now the 1825 cohort married from 1840 onwards and probably followed a nuptiality pattern which corresponds to the proportion of married women, by age groups, in Ontario and in Québec in 1851. By combining this information with the table on average legitimate fertility for the years 1851 and 1871,² we evaluate the number of live-born children to ever-married women for the 1825 cohort. The result is 7.8 children, that is to say, a little less than was the case for women in the eighteenth century who remained in the married state at least until their fiftieth year (8.4 children). These latter were probably married at a slightly earlier age.

A similar calculation can be worked out for the cohort born in 1845. The women in that generation were married from 1860 onwards and we supposed that their nuptiality could be represented by the proportion of married

¹ This figure obviously refers to women over 65 who were living in Canada in 1941. A number of them (30%) were born abroad. It is therefore possible that those who bore their children in Canada bore a number of children different from 4.8.

² Apparently, the legitimate fertility rates did not vary greatly between these two years.

women, by age groups in 1871.³ The legitimate fertility rates which we used were calculated by interpolating the rates for 1871 and 1881, bearing in mind the periods during which the 1845 cohort was of such and such an age. The calculated estimate came to 6.3 children.

We now have the following evaluations for the three cohorts: 1825 – 7.8 children; 1845 – 6.3 children; 1867 – 4.8 children. Between the first and the last cohort, separated by a 42-year interval, the reduction is about 38%. This result does not seem at all improbable.

Thereafter, the completed fertility of women who married continued to decrease, but at not quite so rapid a rate. For instance, consider another 42-year interval starting from the generation born in 1867; the 1909 generation corresponds more or less to the middle generation of women born between 1906 and 1911. Those who married bore an average of 3.15 children, or a reduction of 35% in relation to the descendance of the 1867 generation. We are now close to the cohorts who bore the least number of children: the women born between 1911 and 1916 bore, an average of 3.11 children (those who were married), according to 1961 Census data. They were approaching the end of their fertility period in 1961. As the following generations had not yet borne (in 1961) all their children, the final descendance cannot be calculated; however, the married women who were between the ages of 40 and 45 in 1961 had already had a few more children (3.23) than had the women who had preceded them. This recovery is not of a major size, however.

It is therefore not so much because of the completed fertility of couples that there was a high rise in fertility (current) between 1941 and 1961. The fact is that nine tenths of the rise is due to the marriage rate: a greater proportion of the women are getting married and they marry younger than they used to do.

It is this lowering in age at marriage with, most likely, a drop in the intervals between marriage and various birth orders which explains the fact that, since 1946, the period fertility rates represent an overevaluation of the true behaviour of women inasmuch as the number of children they gave birth to is concerned. This drop in age at marriage and the concentration of births in the early years of the marriage can only be temporary. When these two factors become stabilized, the effect of over-estimating fertility tends to disappear and this is what seems to have been the case since 1959. Just as the high rise in period fertility observed between 1939 and 1959, was largely

³ The fraction representing married women between the ages of 15 and 35 was lesser in 1871 than in 1851; therefore, it would seem that the women who married around 1871, married at a later age than did those who married about 1851.

an apparent one, the drop noted since 1959 might merely mean the disappearance of the temporary rise in period fertility resulting from the two phenomena we have pointed out.

However, it is by no means certain that these temporary phenomena, these surface waves as it were, are not associated with a more fundamental phenomenon: a reduction in the completed fertility of couples. But this brings us to the realm of conjectures and we shall return to future prospects later.

Today, women who marry – or married couples, which comes to about the same thing – bear a descendance which is no more than two fifths of the descendance of the couples who married before 1850. Two particular aspects of this change should be noted: (1) today's very young women have a fertility as high as was that of their ancestors; fertility has been reduced from the age of 20 onwards: by a third in the case of women aged between 20-24, by two-thirds for those between 30-34 and by nine-tenths for those between 45-49. (2) The second aspect of this change is not independent of the first, namely the progressive disappearance of very large families. Today there are fewer couples who remain childless or bear only one child; on the other hand, the proportion of couples bearing six children and more is decreasing and the drop in large families becomes more accentuated as the number of children is high.

Therefore, there is now a convergence in the behaviour of couples towards a completed fertility of between two and four children. In 1961, half the women ever married aged between 45 and 50 had borne a number of children ranging from two to four. Moreover, this convergence in behaviour is found in a great many other instances; whatever the characteristics used to differentiate married women (province of residence, type of residence, ethnic origin, religion, schooling, income, ..., etc.), there is one general phenomenon: as the generations succeed one another, the fertility levels of the different groups tend to converge more and more. But this is only the second phase in a movement that had initially been in the opposite direction: between the middle of the last century and the second decade of this century, groups tended to be differentiated one from another more and more. It is only since this period that the previously mentioned convergence began to manifest itself.

We might be led to believe that this trend towards uniformity in behaviour patterns reduces the relative dispersion of women, considered individually, on the basis of their fertility level. The absolute dispersion is undoubtedly reduced but, bearing the average fertility level in mind, the dispersion seems to be constant. The result is that despite the convergence already pointed out, the disproportion between the contribution made towards renewal of the generations by the most fertile and that by the least fertile

women does not change to any marked extent: one fifth of the women (the most fertile) still provide society with half its children, regardless of whether the fertility is high or low.

Therefore, there is no uniformity of behaviour as yet and we are still far from it. This can be readily ascertained on examining fertility variations related to certain characteristics.

THE FACTORS OF VARIATION IN LEGITIMATE FERTILITY

Variations in fertility can be measured and compared easily, for various observable characteristics, by calculating in each case the relative average deviation between the fertility of each category and average fertility. For instance, in seeking to obtain a measure of the variations in fertility between provinces, calculate the average of the deviations between the fertility of each province and that for Canada as a whole. In the case of women aged between 45-49 in 1961, the result is 0.63 child. However, for the purposes of comparison, this absolute value must be changed into a relative value, and this is done by dividing the absolute average deviation (0.63) by the fertility for Canada as a whole (3.11 children). The relative average deviation then works out at 20.2%. This calculation can be made for each age group and for each characteristic. We limited ourselves to women aged 45-49 in 1961. The following are the results obtained, classified in decreasing order of importance:

<u>Characteristic</u>	<u>Relative average deviation</u>	<u>Absolute average deviation</u>
Wife's ethnic origin	42.0%	1.31 children
Husband's occupation	40.3%	1.02 "
Wife's religion	26.8%	0.83 child
Wife's schooling	24.4%	0.76 "
Province of residence	20.2%	0.63 "
Wife's country of birth	19.5%	0.61 "
Wife's mother tongue	18.6%	0.58 "
Wife's labour force status	18.0%	0.56 "
Type of residence	15.9%	0.50 "
Husband's income	15.8%	0.48 "
Wife's period of immigration	6.8%	0.17 "
Family income	6.1%	0.14 "

Two reservations must be expressed as regards the validity of using this measure in the present instance:

- (a) The value tends to be higher as the number of categories increases. There is an element of arbitrariness in setting up the categories. Where there are few categories (as in the case of mother tongue

where there are only three), there are fewer opportunities of finding extreme instances.

- (b) Not all possible instances were included in the case of several characteristics (country of birth, religion, ethnic origin). The presence or absence of certain categories in the calculations, may affect the results quite markedly. For instance, if Indian and Eskimo ethnic origins are excluded, the value for the relative average deviation is reduced from 42.0% to 18.5%, and this is not markedly different from the relative deviation noted for mother tongue. In the same way, the exclusion of three occupational categories where fertility is high (farmers and stockraisers, loggers and fishermen) brings down the relative average deviation from 40.3% to 21.2%.

A problem in interpretation also arises here. The variations attributed to any characteristic result from numerous subjacent factors: the differences between ethnic origins, for instance, are associated with differences in residence, religion, income, . . . , etc. We shall re-examine this problem later.

The relative average deviation enables us to examine another major aspect of fertility variations: they are much greater in rural than in urban areas. This comes out clearly on comparing the figures for this measure of dispersion in cities of 100,000 inhabitants and over and in the rural farm environment:

Characteristic	Relative average deviation (%)	
	Cities of 100,000 + inhabitants	Rural farm environment
Wife's ethnic origin ⁴	16.9	27.5
Wife's religion	16.7	21.4
Wife's schooling	15.1	25.0
Province of residence	12.1	18.5
Wife's country of birth	19.0	17.0
Wife's mother tongue	14.8	30.2
Wife's labour force status	15.4	8.6
Husband's income	7.9	16.9 ⁵
Wife's period of immigration	4.7	15.1
Family income	4.7	6.6 ⁵

The big city seems to be an important factor towards uniformity in behaviour patterns. There are two exceptions, however: (1) for wife's country of birth, there is slightly more difference in urban than in rural areas. The *absolute* average deviation is greater in farm environment (0.76 child) than in big

⁴ Except Eskimos and Indians.

⁵ Rural non-farm environment; the lack of information on farm income prevented the inclusion of this environment.

cities (0.46 child); (2) the other exception is the woman's labour force status; there is little difference in fertility, in rural environment, between women in the labour force and those who are not, and this is what was to be expected, since there is less conflict between family responsibilities and those which must usually be carried out within the context of a family enterprise.

We must now examine the problem of the multiplicity of factors to be found masked in the apparently simple guise of any of the characteristics studied. On several occasions, in this study, we have attempted to isolate the effect peculiar to certain variables. To put the matter more precisely, we have attempted to measure the fertility variations that can be attributed to variations in any characteristic whatsoever, while keeping constant a certain number of other associated factors. In this way, we were able to ascertain the influence exercised by six factors. The following are the main elements in this type of analysis, for women who were between 45 and 49 years of age in 1961:

<u>Factor for which the influence is measured</u>	<u>Other factors whose influence is disregarded</u>	<u>Category in which fertility is lowest</u>	<u>Category in which fertility is highest</u>	<u>Ratio of highest to lowest fertility</u>
Type of residence	Husband's and wife's schooling; husband's income; religion; mother tongue	Metropolitan areas	Rural non-farm ⁶	1.40 ⁶
Schooling of wife	Schooling and income of husband	University graduate	Elementary	1.41
Schooling of husband	Wife's schooling and husband's income	University graduate	Elementary	1.28
Religion of wife	Husband's and wife's schooling; husband's income; mother tongue	Protestant ⁷	Catholic ⁷	1.32
Income of husband	Husband's and wife's schooling	\$3,000 - \$5,000	Less than \$1,000	1.24
Mother tongue of wife	Husband's and wife's schooling; husband's income; religion	English ⁸	French ⁸	1.06

⁶ We were unable to include rural farm environment in view of the absence of information on income; no doubt we would have found the fertility level to be higher in this environment than in the rural non-farm environment and the ratio would then have been higher.

⁷ Only the Protestant and Catholic religions were included.

⁸ Only the English and French mother tongues were taken into consideration.

Analysis of the influence of residence does create a problem, because the farm environment must be excluded due to the unavailability of information on income for that particular type of residence. We did work out an estimate to take this factor into account: the ratio becomes 1.58 instead of 1.40. It would therefore seem that, of all the factors whose specific influence we have attempted to measure, "type of residence" does induce the highest variations in fertility: the fact of living on a farm would mean an increase in fertility of 58% in relation to the level of fertility in metropolitan areas.

The wife's schooling ranks second as an influential factor. It should be noted, however, that all the women who received only elementary schooling have been regrouped into a single category; had we been able to isolate those who only received very little schooling or who did not get any at all, the variations would probably have proved even more sizable and the wife's schooling might perhaps have turned out to be the most important of the factors in inducing fertility variations.

Adherence to Protestantism or Catholicism equally leads to an impressive fertility difference, namely 32%. It should be remembered that this difference has only been measured in the case of English-speaking couples, though taking into account the schooling of the spouses and the husband's income.

In the case of women aged 45-49, the influence of income on fertility is not easy to assess: the lower incomes (less than \$1,000) are the groups where the highest fertility is found whereas it is in the income group running from \$3,000 to \$5,000 that fertility is lowest; there is a 24% difference between these two groups. Beyond \$5,000, fertility increases with income. A relationship of this sort presupposes that other factors, whose influence could not be eliminated, exercise an effect at the same time as income. We should point out, however, that amongst women between 35 and 39 years of age, the influence of income becomes much more readily apparent: the lowest fertility rate is associated with incomes ranging from \$1,000 to \$3,000, whereas the highest fertility is found associated with incomes of over \$10,000; the excess fertility of the latter in relation to the former group is around 40%. Therefore, a major phenomenon seems definitely to be taking root; an increase in incomes markedly and unequivocally favours fertility. It will be interesting to check this conclusion in the 1971 Census when the women who were between 35 and 39 years of age in 1961 will have pretty well completed their fertility.

In regard to the last table, we might note how very slight is the influence exercised by mother tongue: French mother tongue does not seem necessarily to indicate a much higher fertility than for English mother

tongue, at least once we have eliminated the influence of certain other phenomena, such as religion, which in reality vary with mother tongue.⁹

This analysis can be checked experimentally quite simply. Take a group of women between 45 and 49 years of age, for whom all characteristics are unfavourable to a high fertility: namely, a group of English-speaking Protestant women, university graduates, living in metropolitan areas and whose husband earns between \$3,000 and \$5,000 a year. Suppose their fertility is assigned the value 1.00. At the other extremity of the scale are the French-speaking Catholic women who have only had elementary schooling, who live on farms and whose husband is earning less than \$1,000 a year. In working out the product of the ratios in the last table, we get the fertility index for the latter as compared to the former. The index is: $1.06 \times 1.32 \times 1.28 \times 1.41 \times 1.58 \times 1.24 = 4.92$, that is to say, the fertility of the latter would be about five times higher than the fertility of the former group. This conclusion can now be verified. According to census data, the first group of women bore, on average, 1.48 children and the second bore 7.22. The ratio is equal to 4.89. The true fertility difference as indicated in the last ratio, is therefore equal to what might have been expected in theory.

DIFFUSION OF BIRTH CONTROL

It may be stated, without too much risk, that all sectors of Canadian society have been touched by family planning. The only exclusion to this rule are perhaps Eskimos and Indians living on reservations but these two groups are the only exception – in all probability. Even the French-Canadian farmers seem to have acquired some notions of family planning since the women in this environment, who married, and were born between 1911 and 1916 (that is to say, who were between 45 and 49 years of age in 1961) had borne slightly less than seven children, on average, whereas those born between 1896 and 1901 had had about eight. However, it cannot be said that this trend towards generalized family planning has been as deeply felt by all groups everywhere. Amongst the married women born between 1911 and 1916, certain categories bore less than two children, that is to say bore three and a half times as few children as did the French-Canadian women living in a farm environment; – this is the case, for example, of Jewish women, and the wives of authors, editors and journalists.

By comparing various segments of the population, some idea can be evolved of the greater or lesser degree to which the idea of family planning has penetrated the different strata of society. We feel rather tempted to put forward the hypothesis that the more severely limited is the size of the

⁹ It would seem that in the rural environment, however, French mother tongue is associated with a higher fertility.

family, the older is the practice of birth control and we can then develop some idea of the successive layers in the population which have been reached by this practice, and of the way in which this practice was diffused.

Couples in the big cities and average size cities who have attended university are those most affected and who were probably the first to be affected. Couples where the wife was about 50 years of age in 1961 had had about two children. Couples as a whole, where the husband held either a professional or technical occupation, as well as couples where the husband held a clerical job and who, in either case, live in the same environment, had had a slightly higher number of children (2.2 to 2.5 children). This fertility level is the same as that of women in these same urban areas who had secondary schooling.

As the size of urban areas decreases, fertility increases although there is sometimes a spread determined either by occupational categories or by schooling levels. In the smaller towns (5,000 to 30,000 inhabitants), the occupational categories we have already mentioned had 2.6 children. This is also the case amongst working-class couples in large cities (of more than 100,000 inhabitants). This is fewer than the number of children borne by women who followed university studies and are living on a farm (3.0 children); less also than amongst couples where the husband is working in a professional or technical capacity or as a clerical employee, and who live in a rural non-farm environment (2.8 children).

This "lead" characteristic of large cities is evident in a good many other ways: women living in metropolitan areas and who have only had elementary schooling have borne fewer children (2.8) than have women from rural non-farm environment who have had secondary schooling (3.1 children).

Miners and labourers have had larger families than craftsmen, the difference running from 0.3 to 0.8 child, depending on the type of residence. In the small urban areas (5,000 to 30,000 inhabitants) miners and labourers had 4.3 children, whereas craftsmen had 3.4.

Amongst those who have not made such a spectacular advance along the road to birth control, are those couples where the husband works in one of the primary sectors of the economy (farmers, loggers, fishermen) and this very largely corresponds to couples living in a rural environment who have only received very low schooling. Apparently, the couples where the husband is a logger and who live on farms, are those whose fertility most closely approximates natural fertility (7.5 children). Fishermen in the farm environment have 5.2, and farmers and stockraisers have 4.6. The latter do not comprise a homogeneous group; the less well educated amongst their number have more children since women living on farms and who have only

had elementary schooling, bore 5.1 children. It will be remembered that those in Québec had about seven, and the latter, together with loggers' wives, rural Indian and Eskimo women are those who come closest to a behaviour which would not be affected by any type of birth control.

No doubt, time will decrease these differentials. The convergence in fertility levels has been noted on several occasions in this monograph, particularly as our consideration shifts from the behaviour of the older to the younger generations. However, a more thorough analysis indicates that some factors play quite as important a part amongst the women 45-49 years of age in 1961 as amongst those who were between 65 and 75 years of age, in that same year. This is particularly so for religion (difference between Catholics and Protestants) and for schooling. The type of residence also plays an important part in influencing the fertility, even when the influence of factors which vary with it are eliminated. We were unable to find out whether the influence of this particular factor changes with time, but it would seem that it is far from disappearing. Two other factors help to determine fertility as well, namely, the woman's labour force status and income. Little can be stated in regard to the former but it is reasonable to assume that the latter will have an ever-increasing importance. Couples tend increasingly to rationalize their own behaviour in regard to fertility – and the increasing degree of access to secondary schooling would seem to indicate this is the case – couples will be more and more inclined to adjust the size of their family to their economic resources.

FUTURE PROSPECTS

What prospects can we entertain for the future? What is the fertility level of couples likely to be in twenty or thirty years' time? – in other words, what is likely to be the fertility of couples now being created? In this instance, no reliance can be placed on projections based on past trends. These trends have effectively been interrupted: the more or less regular decline noted amongst women born around 1890 and those born between 1911 and 1916 (45-49 years of age in 1961) has now given place to a recovery in fertility. However, this recovery is observed only amongst two quinquennial generations: ever-married women born between 1916 and 1921, had had a 2.4% surplus of children; in 1961, in relation to their immediate predecessors – they have not quite completed their fertility and the surplus may be 4 or 5% by the time they reach their fiftieth year. In so far as women born between 1921 and 1926 (35-39 years of age in 1961) are concerned, they had already borne about as many children as those who were their predecessors by 10 years. It is more difficult to estimate what their completed fertility will be, the missing element being of a greater order. However, if we may chance a forecast based on past experience: they will

probably bear 6 or 7% more children (for a total around 3.3 children) before they reach their fiftieth year. This percentage also represents the extent of their excess fertility in relation to women born between 1911 and 1916. It would therefore seem that legitimate fertility has increased, at least up to the generation of women born between 1921 and 1926.

Available information is not such as to enable us to guess what the variations will be in the completed fertility of the generation of women born after 1926 and who started to marry about 1945.

The transformation in population structure may prove to be a guide, in this instance. The distribution of couples by religion, ethnic origin, mother tongue will not change at any great speed and no marked effect on fertility can be expected from these factors. However, schooling is very likely to make rapid advances; urbanization will develop further and more and more women will be employed outside the home. These three factors will certainly reduce fertility. Can the reduction be measured?

It must clearly be understood that what follows belongs to the realm of plausible conjectures and not predictions. Let us make three hypotheses:

- (a) Within twenty years from now, the average schooling level for couples will correspond to the secondary. It may be assumed that the excess fertility of couples who have not gone beyond the elementary level will be about compensated by the under-fertility of the more educated. We shall suppose that all developments will be based on the assumption that all couples will have had secondary schooling.
- (b) At present, the fertility of the population as a whole about corresponds to that of people living in cities of 30,000 to 100,000 inhabitants. It would be erroneous to suppose that, within twenty or thirty years, all of the people will be living in cities of over 100,000 inhabitants. The average "type of residence", from the point of view of fertility, will be somewhere between cities of 30,000 to 100,000 inhabitants, and those of over 100,000 inhabitants. This transfer will be underscored by a much more effective rate of diffusion of the culture of major centres. We shall assume that future fertility will correspond to the average for these two types of cities.
- (c) The future increase in the participation rate of married women is difficult to define with any degree of preciseness. It is now about 25%. Suppose that, within twenty years, it runs between 35 and 50%. This would reduce fertility from 3 to 8% in comparison with the situation which now prevails.

These hypotheses can now be applied. Couples amongst whom the wife was between 35 and 40 years of age in 1961, and where both spouses had secondary schooling will probably have borne, once their fertility has been completed, between 2.5 and 2.6 children in cities of 100,000 inhabitants or more, and 2.8 to 2.9 children in cities of 30,000 to 100,000 inhabitants. The average for these figures is 2.7 children. Taking the increase in the number of married women working outside the home into consideration reduces the average to 2.5 or 2.6, depending on the underlying hypothesis.

This means a high reduction in the completed fertility of couples as compared to that of women born between 1921 and 1926: amongst the latter, those who married probably will have had 3.3 children, once they have reached their fiftieth year. The reduction is of 20% between the latter and those who might carry out in fact the hypotheses formulated above.

We did not consider increasing income in our future prospects. It is true that couples formed over the last 25 years have a fertility which increases in direct proportion to income. This is true when the comparison is made at a given moment. The conclusion should not be inferred that the general increase in income will lead to an increase in fertility. In the latter instance, as income increases, other competing needs develop and we feel that these will be evenly matched. It would be risky to make another hypothesis.

Another factor may also play a part: the development and diffusion of foolproof or virtually foolproof birth control methods. While it is difficult to assess the effect of this phenomenon exactly, it is more or less involved in a number of factors that we have taken into account: urbanization and schooling more particularly.

One question mark remains, however. The attempt we have made to assess future fertility rests, in the final analysis, on the recent attitude of couples within certain segments of the population and on changes in social structure. While we can forecast how certain elements of this social structure will change, there is nothing to guarantee that any given attitude affecting fertility behaviour in any social category, will remain stable. Over the recent past, women who had attended university altered their behaviour to a marked degree, and bore larger families than formerly. It may be that amongst couples where both spouses have had secondary schooling – and they are the basis of our hypotheses – will also change their attitudes. It is extremely difficult to make forecasts in a field where all is so subject to change.

In this regard, it is useful to point out that the legitimate fertility level largely depends on the decision which couples who already have two

children will take as regards to whether they should have a third, and whether, amongst those who have three, they will decide to have a fourth. About nine couples out of ten have at least one child and eight out of ten have at least two. This seems to be a stable behaviour pattern. But the transition to three or four children is subject to many variations about which it is very difficult to formulate any prediction. To go even further, surveys would have to be made to determine the intentions of the couples involved.

It may be expected that unless there are radical changes in the attitude of couples, those setting up home during the sixties will have at least 2.6 children on average and this is 13% more than the 2.3 children essential to maintain the population. This presupposes also that nine out of ten women will marry. If 20% of the women were to remain single instead of 10%, 2.6 children per married woman would not suffice to ensure renewal of the generations.

Nothing can be taken for granted. If one woman out of five instead of one out of ten remains unmarried, Canadian couples now setting up home, for the first time will not perhaps bear enough children to allow its generation to transmit life in the same measure that it had received it.

Appendices A-J

A. EVALUATION OF FERTILITY IN THE PROVINCE OF QUÉBEC BETWEEN 1834 AND 1920

The Province of Québec is advantaged by an excellent registration of births of Catholic children from the very outset of French colonization in this country.¹ As the Catholics in this province comprised between 80% and 92% of the over-all population, for this period – and probably accounted for an even higher proportion of the births – the birth rate for the province, during the nineteenth century and until 1920 can be estimated without reference to the population between 0 and 4 years of age, as given in census data. Even if some margin of error exists, there is no denying that the province for which an estimate of the number of births, independently of census data, can be worked out with the least percentage of error is Québec. We might recall that it is with this estimate that we will best appreciate the value of results obtained with the use of figures for the population from 0 to 4 years of age and from 5 to 9 years of age, the only type of information available for the other provinces.

The data available are not presented in quite the same way over the whole period under study and the method of evaluation varies somewhat. There are three distinct sub-periods.

PERIOD 1891-1920

For each year in this period we have the number of Catholic births that were registered. For the years 1894 to 1917 this number had to be corrected to take account of the fact that births were not registered for a small fraction of the population (Columns 1 to 3 in Table A.1). This gives the number of Catholic births. An estimate of the non-Catholic births was arrived at by applying to the non-Catholic population an estimate of Ontario birth rates. Here is how we proceeded.

O.J. Firestone has already estimated the annual number of births for Ontario.² This estimate is based on the number of children under one year of age recorded by the census once every ten years; the estimate includes deaths amongst these children, also declared at the time the censuses were taken. For the intercensal years, Firestone's interpolation takes into account the annual variations in the number of births registered in that province. These births, as related to the population of Ontario, give the birth rates listed in Column 5 of Table A.1. These rates seem rather

¹In Volume V of the 1871 Census there are several tables giving the figures for these births.

²This estimate was not published in its original form; it was part of an estimate of the number of births in Canada, which is found in O.J. Firestone, *Canada's Economic Development, 1867-1953*, Income and Wealth Series VII, London, Bowes and Bowes, 1958, pp. 44-47.

Table A.1 – Estimation of annual number of births, Province of Québec, 1891 to 1920

Year	Number of Catholic births registered ^a	Total population ÷ registered ^b population	Number of Catholic births: 1 × 2	Non-Catholic population ^c	Ontario ^d birth rate (per 1,000)	Number of non-Catholic births ^e : 4 × 5	Total number of births: 3 + 6
	1	2	3	4	5	6	7
1891	54,456	1.0000	54,456			4,542	58,998
1892	52,318	1.0000	52,318			4,339	56,657
1893	53,478	1.0000	53,478			4,490	57,968
1894	53,070	1.0673	56,642			4,455	61,097
1895	56,294	1.0673	60,083			4,469	64,552
1896	55,355	1.0673	59,081			5,099	64,180
1897	57,757	1.0673	61,645			5,182	66,827
1898	57,645	1.0673	61,525			5,145	66,670
1899	55,938	1.0673	59,703			5,013	74,716
1900	53,016	1.0673	56,585			5,249	61,834
1901	54,080	1.0673	57,720	219,638	20.59	4,525	62,245
1902	55,144	1.0673	58,856			4,712	63,568
1903	56,208	1.0237	57,541			4,899	62,440
1904	57,272	1.0418	59,664			5,086	64,750
1905	58,336	1.0593	61,795			5,273	67,068
1906	59,400	1.0342	61,430	250,360	21.81	5,460	67,890
1907	55,794	1.0913	60,888			5,586	66,474
1908	66,686	1.0132	63,516			5,712	69,228
1909	66,632	1.0701	71,306			5,838	77,144
1910	69,533	1.0266	71,385			5,964	77,349
1911	69,630	1.0251	71,376	281,083	21.67	6,090	77,466
1912	71,667	1.0123	72,546			6,360	78,906
1913	73,910	1.0163	75,114			6,630	81,744
1914	75,923	1.0048	76,288			6,900	83,188
1915	76,687	1.0156	77,885			7,170	85,055
1916	74,725	1.0197	76,194	309,145	24.06	7,440	83,634
1917	75,131	1.0238	76,916			7,679	84,595
1918	79,157	1.0000	79,157			7,918	87,075
1919	74,409	1.0000	74,409			8,157	82,566
1920	76,875	1.0000	76,875	331,600	25.32	8,396	85,271
1921	—						88,749 ^f

^a SOURCES: 1891-1893 and 1906-1920: *Annuaire statistique de la province de Québec*, 1921, p. 54; 1894-1900: R. Kuczinski, *Birth Registration and Birth Statistics in Canada*, Washington, Brookings Institution, 1930, p. 59; 1901-1905: Interpolation. ^b From 1891 to 1893 and from 1918 to 1920, registration is complete. From 1894 to 1901, the 1902 ratio was used. For the years 1902 to 1917, see *Annuaire statistique de la province de Québec*, 1921, p. 54. ^c From census data for the years 1901, 1911 and 1921; interpolation for the other years. ^d Rates estimated by relating births estimated by Firestone for Ontario to the population of that province as estimated by DBS, *Annuaire du Canada*, 1936, p. 141. ^e The calculation was for the years 1901, 1906, 1911, 1916 and 1920; for the other years, interpolations were used. Before 1901: Firestone estimate. ^f DBS, *Vital Statistics*, 1958, p. 95.

low, but we have applied them all the same to the non-Catholic population of Québec (Column 4); this calculation was made only once every five years, from 1901 onwards and we interpolated for the other years. For the years 1891 to 1900, we have used the evaluations that Firestone made himself for Québec, using the same method.

By adding Columns 3 and 6, we obtain an estimate of the total number of births (Column 7). It will be noted—at least for recent years—that these estimates are not irreconcilable with the figures found in the vital statistics for the year 1921.

PERIOD 1867-1890

The method just described was used by Firestone to evaluate births in Québec during the period in which we are interested. We give the essential elements of this evaluation in Table A.2.

PERIOD 1834-1866

For this period, we have no evaluation of the Ontario birth rate with which to assess the non-Catholic births in Québec. The estimation of the total number of births will be based on extending back, into the past, the proportion of Catholic births (1867-1900), calculated from the estimates we have just made. Table A.3 gives this proportion, by five-year periods, as well as the proportion of the Catholic population to the population as a whole, from census data. It will be found that these two proportions decrease — with some deviations — as we recede into the past. If we go back from the 1896-1900 period to study the 1867-1870 period, we find the percentage of Catholic births drops by 2.8% (91.6%-88.8%). During this period (1901-1871), the Catholic percentage of the population changed from 86.6 to 85.6%, or dropped by 1%. The decrease in the percentage of Catholic births was about three times as high as the decrease in the percentage of the Catholic population.

We feel, however, that this ratio between the two decreases could not continue indefinitely. Let us suppose that during the period 1834-1866, the difference between the percentage of Catholic births and the percentage of the Catholic population had been the same as during the 1867-1870 period, namely, 3.2% (88.8%-85.6%). Using this hypothesis, we have but to add 3.2% to the Catholic percentage of the population (known in census years)

Table A.2 – Estimation of annual number of births, Province of Québec, 1867 to 1890

Year	Number of Catholic ^a births	Non-Catholic ^b population (in thousands)	Ontario ^c birth rate (per 1,000)	Number of non-Catholic births: 2 × 3	Total number of births: 1 + 4
	1	2	3	4	5
1867.....	43,757	174	31.7	5,516	49,273
1868.....	43,783	176	31.0	5,454	49,237
1869.....	43,920	179	30.6	5,486	49,406
1870.....	43,760	181	30.7	5,549	49,309
1871.....	44,730	184	28.9	5,312	50,042
1872.....	46,716	186	29.4	5,461	52,177
1873.....	47,848	187	29.0	5,432	53,280
1874.....	49,712	188	29.5	5,540	55,252
1875.....	52,936	190	29.4	5,578	58,514
1876.....	52,568	191	29.0	5,545	58,113
1877.....	51,722	192	29.2	5,610	57,332
1878.....	52,915	194	28.5	5,525	58,440
1879.....	51,648	195	28.1	5,479	57,127
1880.....	51,889	197	28.1	5,528	57,417
1881.....	50,484	198	26.1	5,174	55,658
1882.....	52,475	199	26.4	5,250	57,725
1883.....	53,086	200	25.9	5,178	58,264
1884.....	50,572	201	26.0	5,228	55,800
1885.....	49,201	202	25.7	5,189	54,390
1886.....	53,532	202	25.6	5,181	58,713
1887.....	53,306	203	24.6	4,990	58,296
1888.....	52,976	204	24.4	4,980	57,956
1889.....	52,329	205	24.5	5,025	57,354
1890.....	52,228	206	23.4	4,818	57,046

^a SOURCES: 1867 to 1875: DBS, *Census of Canada, 1871*, Vol. V, p. 162; 1876 to 1883: DBS, *Census of Canada, 1881*, Vol. IV, p. 144; 1884 to 1890: *Annuaire statistique de la province de Québec, 1921*, p. 54. ^b From census data. ^c From Firestone; the method is described in the text.

Table A.3 – Percentage of Catholic births and of the Catholic population, Province of Québec, 1867 to 1900

Period	% of Catholic births	Catholic % of population ^a
1867-1870	88.8	85.6
1871-1875	89.9	
1876-1880	90.4	86.1
1881-1885	90.8	
1886-1890	91.4	86.8
1891-1895	92.4	
1896-1900	91.6	86.6

^a For the census year immediately following the last year of the period indicated.

to get an assessment of the proportion of the births that are Catholic. We then get the following figures:

Percentage of Catholic population		Percentage of Catholic births	
Census year	%	Corresponding period	%
1844	82.1	1839-1843	85.3
1851	83.9	1846-1850	87.1
1861	84.9	1856-1860	88.1
1871	85.6	1866-1870	88.8

By interpolation, we obtained the relative percentages of Catholic births for other periods. These periods are related to census years. In Table A.4 will be found an evaluation of the total number of births calculated by using this method.

RÉCAPITULATION

The purpose of these estimates is to compare the results with those which can be obtained by calculating with figures for the population aged 0-4 and 5-9, taken from census data. The periods for which these two estimates are computed must approximately correspond for the comparison to be valid, but it did not seem essential to us that we attempt to get the periods to correspond exactly. The following are evaluations, for various five-year periods which will be useful to this end, of the number of births in the province of Québec (Table A.5) for the period from 1834 to 1920.

Table A.4 – Estimation of the number of births, Province of Québec, for selected periods, 1834 to 1870

Period	Number of Catholic births ^a	Proportion of Catholic births	Total number of births: 1 + 2
	1	2	3
1834-1838	124,611	.850	146,601
1839-1843	137,949	.850	162,293
1842-1846	154,529	.853	181,159
1847-1851	169,502	.871	194,606
1851-1855	180,135	.876	205,634
1856-1860	199,609	.881	226,571
1861-1865	222,526	.884	251,584
1866-1870	218,033	.888	245,533

^a DBS, *Census of Canada, 1871*, Vol. V, p. 235.

Table A.5 – Estimation of the number of births, Province of Québec, by five-year periods, 1834 to 1920

Period	Number of births	Period	Number of births
1834-1838	146,601	1876-1880	288,429
1839-1843	162,293	1881-1885	281,837
1842-1846	181,159	1886-1890	289,365
1847-1851	194,606	1891-1895	295,592 ^a
1851-1855	205,634	1896-1900	314,813 ^a
1856-1860	226,571	1901-1905	317,015 ^a
1861-1865	251,584	1906-1910	354,319 ^a
1866-1870	245,533	1911-1915	407,980 ^a
1871-1875	269,265	1916-1920	421,703 ^a

^a A second estimate method was used for the years from 1891 to 1920. The results were slightly different from the earlier results. Finally, we opted for the average of the two evaluations.

B. EVALUATION OF THE BIRTH RATE FOR CANADA AND CERTAIN PROVINCES BETWEEN 1834 AND 1921

The most reliable figures from which the number of births in Canada before 1921 can be worked out – except for the Province of Québec – are the census data on the population in the 0-4 and 5-9 age groups. To effect the transition from these populations to the corresponding births, a comparatively simple method is available: the population aged from 0-4 and 5-9 can be divided by an appropriate survival rate, so as to reconstitute the numbers of births which may have given rise to these populations. Two types of problems now arise.

The first is inherent in the method itself: if applied correctly, it effectively gives the number of births from which are derived the populations observed in censuses; but if there have been migrations, these births did not necessarily occur on the territory in which the children were listed by the census. In fact, children have been recorded by the Canadian census, who were born in other countries. Conversely, there may have been births in Canada of children who later migrated to some other country before they were recorded by the Canadian census. The margin of error, in both cases, depends on the size of the migrations. In Canada, the latter are far from negligible. Some idea of the effect of the phenomenon can be had by examining the estimates in Table B.1. These cover net migrations by 10-year periods, between 1851 and 1941, either for women aged between 20 and 35 (Canada only), or for the population over 10 years of age (Canada and provinces).

If we suppose that these migrations occurred regularly, over the course of each decade, the inescapable conclusion is that, based on the number of children present at the time of the census, there is an underevaluation of births, in Canada, for the years 1861 to 1901 and an over-evaluation, for the years 1851-1861 and 1901-1921. It is difficult to estimate to what extent, and we made no attempt to correct the figures on the basis of Table B.1. Using the migration rates of women aged from 20 to 34 (known for Canada as a whole) would probably have led to too high a correction because it is probable that the married women – those who were giving birth to children – were migrating less than others.

There are other difficulties related to the application of the method. Survival tables corresponding to the mortality of the children involved must also be used. We shall return to this problem later. The other major difficulty resides in the underenumeration of children between 0 and 10 years of age, at census time. An attempt to correct the ensuing error will be made, thanks to the possibility that exists of comparing the results of this method

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with results of an independent method, for the Province of Québec (see Appendix A).

**Table B.1 – Net migration by period in relation to population
at end of period: population over ten years of age
(Canada and provinces), and women aged 20-34
(Canada), 1851 to 1941**
(in percentage)

Type of migration and period	Canada	P.E.I.	N.S.	N.B.	Qué.	Ont.	Man.	Sask.	Alta.	B.C.
Population 10 years and over										
1851-1861....	5.4									
1861-1871....	- 7.3									
1871-1881....	- 2.7									
1881-1891....	- 5.6	-17.1	-12.5	-18.3	-12.3	-5.2	47.7	-	-	46.2
1891-1901....	- 4.4	-21.5	-11.3	-12.7	-10.1	-8.3	25.7	-	-	39.7
1901-1911....	12.9	-23.0	- 7.4	-11.3	- 2.0	3.7	32.1	77.3	76.5	50.3
1911-1921....	1.7	-20.3	- 9.2	- 8.6	- 5.7	2.0	5.3	14.5	19.6	13.8
1921-1931....	1.3	-13.0	-17.4	-13.9	- 0.5	4.6	-1.8	- 0.7	3.8	17.3
1931-1941....	- 1.2	- 2.6	0.4	- 3.6	- 1.2	2.4	-6.8	-19.1	-5.4	10.2
Women aged 30-34										
1851-1861....	2.2									
1861-1871....	-12.4									
1871-1881....	-11.1									
1881-1891....	-14.2									
1891-1901....	-15.0									
1901-1911....	8.4									
1911-1921....	4.7									
1921-1931....	- 0.8									
1931-1941....	- 3.7									

Source: Nathan Keyfitz, "The Growth of Canadian Population" in *Population Studies*, Vol. IV, No. 1, June 1950, pp. 50-54.

CHOICE OF SURVIVAL RATES

We have no Canadian mortality table prior to 1931 for the purposes involved in this monograph. We therefore have to use those of other countries that may cover the period 1840-1921. Two series of tables were available, namely, the Swedish¹ and the English.² It is difficult to know to what extent either approximate the Canadian mortality situation. It may be supposed that the Canadian resembled that of the white people in the

¹Tables of Mortality and of Survival for the Years 1816-1910, Stockholm, 1912.

²The Registrar General's Supplement: England and Wales, 1931, Part III, Table 9, p. 27.

U.S.A. Still an interesting comparison can be made for the period 1901-1910 for which there are Swedish, English and white US³ tables available, the last-named being that of J.W. Glover.

What we are here comparing are the survival rates for the population aged 0-4 and 5-9, that is to say, the ratio of survivors in the 0-4 age group (or 5-9 age group as the case might be), to the total number from five generations of births.

This is how the survival rates in which we are interested compare, from one table to another.

	Survival rates 0-4 years		Survival rates 5-9 years	
	Male	Female	Male	Female
1. Glover table 1901-1910 ...	0.85230	0.86716	0.81300	0.82441
2. English table 1901-1910 ..	0.83056	0.85674	0.78603	0.81327
3. Swedish table 1901-1910 ..	0.89111	0.90772	0.85549	0.87328
4. Ratio $\frac{1}{2}$	1.0262	1.0122	1.0343	1.0137
5. Ratio $\frac{1}{2}$	0.9564	0.9553	0.9503	0.9440

We supposed that Canadian mortality might be represented by the English mortality tables while bearing in mind the difference observed for the period 1901-1910, between the English and the Glover tables. In other words, we suppose that Canadian mortality is the same as that of the white population in the U.S.A., and that the latter is the same as the English mortality except for the slight advantage measured for the period 1901-1910, which we applied to the English tables. In practice, this means that we shall apply to our populations aged 0-4 and 5-9, the survival rates drawn from the English tables, but only after having multiplied them by the ratios which appear in line 4 of the preceding table. Had we adopted the corrected Swedish tables, the results would not have been very different, because the two series of tables develop in about the same way over time. In Table B.2, will be found the survival rates that we applied to the populations 0-4 years and 5-9 years from Canadian censuses.

In principle, all that remains to be done is to divide the populations aged 0-4 or 5-9 by the appropriate survival rates to get the corresponding births, that is to say, if X be the census year, the years of the births X-5 to X and X-10 to X-5. However, corrections must be made due to the under-evaluation of children in the census. We made two corrections.

³US, Bureau of the Census, *United States Life Tables, 1890, 1901, 1910 and 1901-1910*, Washington, G.P.O., 1921.

Table B.2 – Survival rates of population groups 0-4 and 5-9 years of age applied for the estimation of births, 1844 to 1941

Canadian census years	Mortality table used	Survival rates ^a			
		Population 0-4 years		Population 5-9 years	
		Male	Female	Male	Female
1844	Engl. 1838-1844 .....	.81126	.82693	.73046	.74099
1852 & 1861	Engl. 1838-1854 .....	.80863	.82441	.72832	.74064
1871 & 1881	Engl. 1871-1880 .....	.81629	.83326	.74430	.75903
1891	Engl. 1881-1890 .....	.82211	.84082	.76565	.78300
1901	Engl. 1891-1900 .....	.81653	.83591	.76591	.78251
1911	Glover 1901-1910 .....	.85230	.86716	.81300	.82441
1921	Engl. average 1910-1912 & 1920-1922	.89855	.90788	.86907	.87498
1931	Canada 1931 .....	.90661	.92424	.88512	.90553
1941	Canada average 1931 & 1941 .....	.92012	.93560	.90166	.91982

^aThe survival rates derived from English mortality tables have been multiplied by the following correction factors.

0-4 years: males: 1.0262 females: 1.0122;
5-9 years: males: 1.0343; females: 1.0137.

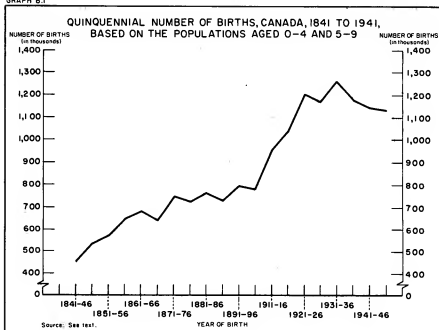
FIRST CORRECTION

When the populations aged 0-4 and 5-9 are divided by the survival rates, the results are marked by an anomaly as striking as it is regular: the number of estimated births starting from children 0-4 years is systematically lower than what we expected. Translated graphically, these results give a "saw-toothed" curve. We have here reproduced (Graph B.1) the curve for births in Canada. For all this period of some one hundred years, there are only two exceptions: the births from 1846-1851 and from 1856-1861.

This anomaly can only be imputed to the underenumeration of children aged 0-4, or more exactly to a higher underenumeration for the latter than for children aged 0-5. We will effectively see that we have every reason to believe there were omissions even in the latter group.

So we made a first correction, by replacing the number of births arising out of the 0-4 age group by the number found by working out the arithmetic mean of the two numbers of adjacent births. Graphically, this is equal to interpolating with the use of a straight line.

GRAPH B.1



These "saw-teeth" were found, with similar regularity, for all the provinces we studied, except Québec. In this latter province, the depressions are only found in three instances: births estimated on the basis of the population 0-4 years in the census statistics for 1901, 1921 and 1931. And except for the year 1921, the depressions are not particularly pronounced.

We should add one final remark to reply to a possible objection. It might be thought that the peaks corresponding to children aged 5-9 are due to migrations, which affect the latter group more than the 0-4 age group. But it should be pointed out that the "saw-teeth" are observed in periods both of net emigration and net immigration.

SECOND CORRECTION

There is nothing to reassure us that the correction we have just made is sufficient: at best, this correction brings the underenumeration of children aged 0-4 to the level of that for children aged 5-9. But the latter are perhaps affected by omissions as well. This is the impression gathered

TRENDS AND FACTORS OF FERTILITY IN CANADA

from a comparison, for the Province of Québec, of the results obtained by using the survival rates method to the estimate of births based on the registration of Catholic births. Table B.3 makes this comparison possible. Except for some older periods, the estimate based on the registration of Catholic births gives larger figures than the one based on the reconstitution of births from the populations aged 0-4 and 5-9. The former method seems

Table B.3 – Comparison of the estimation of the quinquennial number of births by the use of two methods, Province of Québec, 1834 to 1941

(figures in thousands)

Period	Estimate based on birth registra- tion ^a	Estimate based on populations aged 0-4 and 5-9 ^b	Ratio 1 ÷ 2
	1	2	3
1834-1839.....	147	130	1.1290
1839-1844.....	162	163	0.9958
1842-1847.....	181	173	1.0478
1847-1852.....	195	206	0.9438
1851-1856.....	206	208	0.9892
1856-1861.....	227	230	0.9844
1861-1866.....	252	221	1.1397
1866-1871.....	246	221	1.1098
1871-1876.....	269	244	1.1053
1876-1881.....	288	250	1.1516
1881-1886.....	282	253	1.1126
1886-1891.....	289	264	1.0964
1891-1896.....	296	271	1.0892
1896-1901.....	315	293	1.0736
1901-1906.....	317	315	1.0062
1906-1911.....	354	340	1.0424
1911-1916.....	408	353	1.1549
1916-1921.....	422	374	1.1269
1921-1926.....	435	395	1.1011
1926-1931.....	414	389	1.0649
1931-1936.....	394	382	1.0325
1936-1941.....	393	381	1.0305

^aSee Appendix A for the years 1834 to 1921; see vital statistics for subsequent years.

^bThe populations aged 0-4 and 5-9 were divided by the appropriate survival rates. Certain figures corresponding to the population 0-4 (first correction mentioned earlier) were adjusted. The populations aged 0-4 and 5-9 were taken from the following census statistics: Births between 1834 and 1861 (children recorded in the censuses of 1844, 1852 and 1861) *Census of Canada, 1871*, Vol. IV, pp. 149, 208-09 and 294-95. Births between 1861 and 1871 (children recorded in the 1871 Census), *Census of Canada, 1871*, Vol. V, pp. 40-41. Births from 1871 to 1941 (children recorded in the 1881, 1891, 1901, 1911, 1921, 1931 and 1941 Censuses) *DBS, Census of Canada, 1941*, Vol. I, p. 609.

more accurate; we have no reason to believe that it leads to over-estimation. Indeed, we may be led to reach the contrary conclusion because, on the one hand, there must have been omissions in the registration of Catholic births and, on the other hand, the estimation of non-Catholic births results from applying Ontario birth rates which are probably underestimated.*

It may be admitted that, in Québec's case at least, the underestimation of births implicit in using the survival rates method is at least equal to the difference between the results obtained by the two methods. Column 3 in Table B.3 gives some idea of the relative importance of the underevaluation resulting from the survival rates method. It reaches 15% for births in 1911-1916 and for births in 1876-1881. No regularity appears in the variations of the ratios in Column 3; more frequently than not, the ratio corresponding to children aged 0-4 is lower than the ratio corresponding to the children aged 5-9 (6 cases out of 11); in two cases the ratio is higher and in three cases, the ratios are about equal.

We will suppose that the underenumeration thus estimated for the Province of Québec equally applied in the case of other provinces and for Canada as a whole. This is a difficult hypothesis to justify, but there does not seem to be a better correction method and it seemed wiser to use this one than none at all. It will be noted that this correction does not lead either to exaggerated births or fertility rates since neither the birth or fertility rates for Canada as a whole nor indeed for the other provinces exceed those for the Province of Québec, except in quite exceptional periods.

Instead of applying the correction coefficients as they appear in Column 3 of Table B.3, we used average coefficients, by grouping in pairs the coefficients from one and the same census. Therefore, in the final analysis we end up with the following correction coefficients:

<u>Year of birth</u>	<u>Correction coefficient</u>	<u>Year of birth</u>	<u>Correction coefficient</u>
1834 - 1844	1.0624	1891 - 1901	1.0814
1842 - 1852	0.9958	1901 - 1911	1.0243
1851 - 1861	0.9868	1911 - 1921	1.1409
1861 - 1871	1.1248	1921 - 1931	1.0830
1871 - 1881	1.1284	1931 - 1941	1.0315
1881 - 1891	1.1045		

*Fundamentally, these rates are based on the population aged 0 to 1, which was probably greatly underestimated in census statistics.

RESULTS FOR CANADA AND CERTAIN PROVINCES

The following is a summary of the method used. The numbers of children aged 0-4 and 5-9 years were divided by the appropriate survival rates. A first correction was made for the children aged 0-4, so as to take into account the underenumeration particular to this group. A second correction was then made, based on the difference which exists in the Province of Québec, between the result of the preceding calculations and those resulting from an estimate based on the registration of Catholic births to which we added an estimate of the number of non-Catholic births. The results are indicated in Table B.4. We did not work out these calculations for all the provinces but all the major regions of Canada are represented by at least one province.

**Table B.4 – Estimation of the quinquennial number of births,
Canada and selected provinces, 1834 to 1921**

Period ^a	Quinquennial number of births (in thousands)						
	Canada ^b	N.S.	Qué.	Ont.	Man.	Sask.	B.C.
1834-1839	—	—	147	—	—	—	—
1839-1844	—	—	162	132 ^c	—	—	—
1842-1847	468	—	181	188	—	—	—
1847-1852	548	—	195	207	—	—	—
1851-1856	576	58	206	245	—	—	—
1856-1861	657	63	227	306	—	—	—
1861-1866	794	78	252	348	—	—	—
1866-1871	818	81	246	358	—	—	—
1871-1876	844	85	269	369	12	—	8
1876-1881	853	82	288	364	21	—	10
1881-1886	845	78	282	352	28	—	12
1886-1891	863	76	289	341	38	—	17
1891-1896	864	74	296	322	46	17	22
1896-1901	950	74	315	322	57	44	31
1901-1906	982	70	317	305	65	68	37
1906-1911	1,108	70	354	334	80	96	50
1911-1916	1,374	78	408	403	105	139	71
1916-1921	1,409	76	422	414	101	143	73

^aThe limits of the periods depend on the Census date. Generally speaking, they were taken slightly before mid-year but the 1852 census is dated January 12.
^bIn all cases, the territory covered is the present territory, less Newfoundland.
^cFor the years 1837-1842.

In 75 years the number of births has tripled in Canada. It is interesting to note that there were more births registered in Ontario than in Québec for a long time (1842 to 1901). Between the 1871-1876 period and the 1901-1906 period the number of births diminished constantly in Ontario; the same phenomenon occurred in Nova Scotia, whereas in Québec, the instances of decrease are few and relatively unimportant. However, these phenomena are easier to interpret in terms of birth rates, which will be given later.

Beforehand, we shall compare our estimate of births for Canada with the Keyfitz estimate (Table B.5). For the first two decades, our estimate is slightly lower, because we used a correction coefficient smaller than the unit, for these two periods. For the other decades, our estimate is markedly higher, the difference varying between 8.2 and 19.0% in comparison with the Keyfitz estimate.

Table B.5 – Comparison of our estimation of births with that of Keyfitz, Canada, 1841 to 1921

(figures in thousands)

Period	Keyfitz estimate ^a	Our estimate	Ratio of the two estimates ^b
1841-1851	1,050	1,016	.968
1851-1861	1,281	1,233	.962
1861-1871	1,369	1,612	1.178
1871-1881	1,477	1,697	1.149
1881-1891	1,538	1,708	1.110
1891-1901	1,546	1,814	1.173
1901-1911	1,931	2,090	1.082
1911-1921	2,338	2,783	1.190

^aNathan Keyfitz, "The Growth of Canadian Population" *op. cit.*, p. 55.

^bOur estimate divided by the Keyfitz estimate.

BIRTH RATES

With the data available to us, we cannot calculate yearly birth rates. We merely calculated these rates for the census years by working out the ratio of one tenth of the two adjacent quinquennial birth figures to the total population. Thus, we divided the tenth of the births for 1866-1876 by the population of 1871. The results appear in Table B.6 for Canada and selected provinces. The rates drop from the start for Canada as well as for all the provinces. The bridging of these figures to vital statistics rates does not seem to lead to any anomaly. Chapter 2 includes a graph illustrating the results of Table B.6 as well as comments related to it (Graph 2.2).

Table B.6 – Birth rates by ten-year periods, Canada and selected provinces, 1831 to 1921

Period	Birth rate per 1,000 inhabitants						
	Canada	N.S.	Qué.	Ont.	Man.	Sask.	B.C.
1831	—	—	55.2	—	—	—	—
1837 - 1846	—	—	—	66.9	—	—	—
1842 - 1846	—	—	51.8	—	—	—	—
1846 - 1856	46.2	—	45.0	47.5	—	—	—
1856 - 1866	44.9	42.7	43.0	46.8	—	—	—
1866 - 1876	45.0	42.8	43.2	44.8	—	—	—
1876 - 1886	39.3	36.2	42.0	37.2	78.7	—	43.8
1886 - 1896	35.7	33.3	39.3	31.3	55.0	—	39.8
1896 - 1906	36.0	31.2	38.3	28.8	48.0	122.3	37.8
1906 - 1916	34.4	30.1	38.0	29.1	40.0	47.9	30.9
1916 - 1926 ^a	30.5	26.1	36.3	26.3	30.2	33.1	23.6

^aFor this period, we added our estimates for 1916-1921 and births reported in vital statistics for the years 1921 to 1925.

C. ESTIMATE OF AGE-SPECIFIC FERTILITY RATES FOR QUÉBEC AND CANADA¹ IN 1921

The Province of Québec has only been part of Canada's vital statistics' system since 1926, so that for the year 1921, there are neither age-specific fertility rates for Québec nor for Canada as a whole. We shall estimate these rates for all married and unmarried women as a whole and for married women only (legitimate fertility).

"ALL MARITAL STATUS" FERTILITY RATES (PROVISIONAL ESTIMATES)

Two methods were used to come to a distribution of births by mother's age, either for the Province of Québec or for Canada as a whole.

FIRST METHOD. For the years 1926 to 1931, vital statistics were used to calculate the ratio of fertility rates for Canada as a whole to those for Canada minus Québec, for each five-year age group. These ratios were plotted on a diagram and their trend has been extended into the past to 1921. After adjustment (Column 1, Table C.1), these ratios were applied to fertility rates for Canada less Québec in 1921;² fertility rates and the number of births by mother's age were thus obtained for Canada as a whole. The total was 258,523 births, instead of 257,727, the figure found in vital statistics.³ A slight correction to adjust the total gave the rates and numbers of births in Columns 2 and 3 of Table C.1. By subtracting from this estimate the number of births, by age of mother, which is known for Canada less Québec, gives the distribution of births by mother's age groups for Québec (Column 5).

SECOND METHOD. A second estimate of the number of births in Québec, by mother's age, is based in extending into the past the trend in fertility rates for Québec over the period 1926-1936. This operation, following an adjustment to bring the total number to 88,748 (number drawn from vital statistics) gives the rates found in Column 6, Table C.1. By applying these rates to the female population within the specified age groups, we arrive at the number of births by mother's age (Column 7).

We decided to use the average of the results given by these two methods. This gives, for Québec, the births in Column 1, Table C.2 and the fertility rates in Column 2. An addition then gives the births for Canada (Column 3), from which age-specific fertility rates can be derived (Column 4). Except for the 15-19 age group, Québec has rates that are higher than those for Canada as a whole, and this conforms to what we know through vital statistics for 1926 and later.

¹Excluding Newfoundland.

²DBS, *Vital Statistics, 1951*, p. 21.

³DBS, *Vital Statistics, 1956*, p. 89.

Table C.1 - Estimation of the number of births, by age of mother, by the use of two methods, Province of Québec, 1921

Age of mother	Ratio 1921 ^a	Fertility rate, Canada (per 1,000)	First method			Second method	
			Number of births, Canada ^b	Number of births, Canada less Québec ^c	Number of births, Province of Québec:3-4	Fertility rates, Province of Québec (per 1,000)	Number of births, Province of Québec
	1	2	3	4	5	6	7
15-19 .....	.974	36.9	14,727	10,473	4,254	32.7	4,046
20-24	1.086	179.0	64,614	42,309	22,305	195.3	20,519
25-29	1.122	208.0	70,578	46,485	24,093	264.0	23,614
30-34	1.105	170.3	52,801	35,871	16,930	240.4	18,763
35-39	1.246	136.6	39,671	24,324	15,347	223.2	15,474
40-44	1.232	57.3	13,814	8,532	5,282	98.7	5,753
45-49	1.170	7.7	1,522	985	537	11.8	579
Total			257,727	168,979	88,748		88,748

^a Estimate, by graphic extrapolation, of the fertility rate for Canada as a whole divided by the fertility rate for Canada less Québec.^b Obtained by multiplying the female population within the specified age groups for all of Canada by the rates in Column 2.^c Obtained by multiplying the population involved in the fertility rates for Canada less Québec. See DBS, *Vital Statistics, 1951*, p. 21.

**Table C.2 – Estimation of births and fertility rates,
Québec and Canada, 1921**

Age of mother	Province of Québec		Canada	
	Number of births	Fertility rates (per 1,000)	Number of births	Fertility rates (per 1,000)
	1	2	3	4
15-19	4,150	33.6	14,623	36.6
20-24	21,412	203.8	63,722	176.6
25-29	23,854	266.7	70,340	207.2
30-34	17,846	228.6	53,717	173.2
35-39	15,410	222.3	39,734	136.8
40-44	5,518	94.7	14,049	58.3
45-49	558	11.4	1,542	7.8
Total	88,748		257,727	

These estimates are provisional: they will be corrected in accordance with the estimate for legitimate fertility rates.

LEGITIMATE FERTILITY RATES

Basically, the issue is to discover the distribution, by mother's age, of legitimate and illegitimate births in Québec in 1921. To work out this figure, we used the proportion of legitimate births observed in Québec, in 1926, for each age group (Column 1, Table C.3). If this proportion is applied to the births estimated precendingly for the year 1921, the result is the distribution of legitimate births in Column 2. Finally, dividing each of these numbers by the female married population in each age group gives the rates in Column 3. The curve representing these rates is quite irregular and requires a correction (Graph C.1). We therefore adjusted this curve graphically, which gave us the corrected rates in Graph C.1 and in Column 4.

**Table C.3 – Estimation of legitimate births and
legitimate fertility rates,
Province of Québec, 1921**

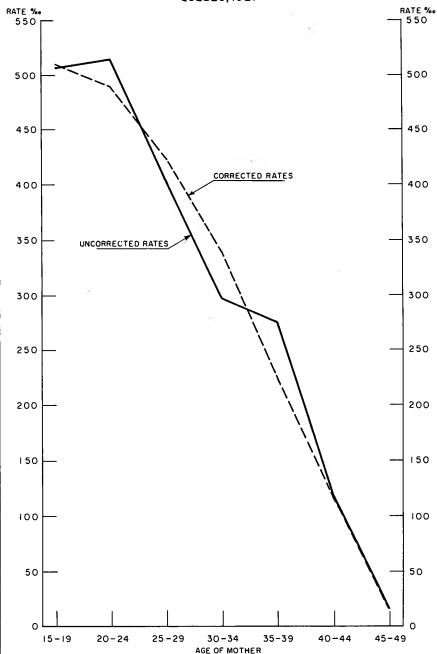
Age of mother	Percentage of legitimate births, Québec, 1926	Number of legitimate births, Québec, 1921	Legitimate fertility rates, Québec, 1921 (per 1,000)	Corrected legitimate fertility rates, Québec, 1921 (per 1,000)
	1	2	3	4
15-19.....	77.1	3,199	507.7	510
20-24.....	95.6	20,478	515.0	490
25-29.....	98.8	23,575	403.1	425
30-34.....	99.4	17,742	297.0	340
35-39.....	99.6	15,353	275.8	225
40-44.....	99.7	5,502	118.1	118
45-49.....	99.3	554	14.2	14
Total.....		86,403		

“ALL MARITAL STATUS” AND LEGITIMATE FERTILITY RATES USED

However, this last estimate led to a modification in the distribution of legitimate and illegitimate births for Québec as a whole (and therefore for Canada) by mother's age. In the final analysis, we kept the estimates given in Table C.4. Obviously, the exactness in rates and numbers is deceiving. But we felt it might be useful to those who wanted to check the calculations.

GRAPH C.1

CORRECTED AND UNCORRECTED LEGITIMATE FERTILITY RATES, QUÉBEC, 1921



Source: Table C.3

**Table C.4 – Final estimation of births, of legitimate births,
and of general and legitimate fertility rates,
Canada^a and Québec, 1921**

Age of mother	Number of births	Fertility rates (per 1,000)	Number of legitimate births	Legitimate fertility rates (per 1,000)
CANADA				
15-19	14,641	36.7	12,438	472.9
20-24	62,684	173.7	60,597	396.7
25-29	71,664	211.2	70,904	300.7
30-34	56,255	181.4	55,887	225.6
35-39	36,904	127.0	36,735	152.8
40-44	14,046	58.3	13,976	70.6
45-49	1,533	7.7	1,511	9.5
Total	257,727		252,048	
QUÉBEC				
15-19	4,168	33.7	3,213	510
20-24	20,374	193.9	19,480	490
25-29	25,178	281.5	24,877	425
30-34	20,384	261.1	20,260	340
35-39	12,580	181.5	12,530	225
40-44	5,515	94.6	5,498	118
45-49	549	11.2	545	14
Total	88,748		86,403	

^a Excluding Newfoundland.

**D. ESTIMATE OF FEMALE POPULATION AGED 15-49, AND
OF THE MARRIED FEMALE POPULATION,
BY FIVE-YEAR AGE GROUPS,
CANADA AND SELECTED PROVINCES,
1851, 1871, 1891 AND 1911**

DISTRIBUTION BY AGE GROUPS

The population distribution by sex and five-year age groups is given for 1891 and 1911 in the 1941 Census.¹ The 1931 Census² provides the same information for Canada as a whole in 1871, as well as for those provinces which were then part of Confederation.³ Some minor adjustments had to be made in order to distribute the individuals whose age was undeclared; we distributed them proportionately to those whose age was declared. Information for 1851 only relates to Ontario and Québec. Furthermore, the age distribution is only given for ten-year groups between 20 and 50 years. We used graphic interpolation to get a distribution by five-year age groups. Women whose ages were undeclared also had to be distributed. This gives the distributions in Table D.1.

**Table D.1 – Distribution of women aged 15-49, by five-year age groups,
Ontario and Québec, 1851**

Age	Québec	Ontario	Age	Québec	Ontario
15-19	53,180	55,660	35-39	20,300	21,300
20-24	41,700	43,800	40-44	17,250	17,000
25-29	32,750	34,900	45-49	14,300	13,600
30-34	25,100	27,100			

AGE DISTRIBUTION OF MARRIED WOMEN

The 1921 Census⁴ gives this distribution for the year 1911. Only a slight adjustment is required to make a distribution of married women

¹ DBS, *Census of Canada, 1941*, Vol. I, pp. 606 and following.

² Vol. I, p. 387.

³ Vol. V, pp. 36, 40 and 48.

⁴ Vol. II, pp. 140 and following.

whose age is undeclared. For 1891, the question becomes more complex. Two sources of information are available: the 1931 Census⁵ gives the percentage of women who are married for the following age groups: 15-19, 20-24, 25-34, 35-44, and 45-54 years; on the other hand, the 1941 Census⁶ gives the number of married women by ten-year age groups. Two methods were used and we opted for the average results from these two methods.

FIRST METHOD. We estimated the proportions of married women for five-year age groups, by graphic interpolation of the known percentages, for ten-year age groups. These percentages were applied to the number of women in each five-year age group, and this gave the number of women who were married. A slight adjustment was then made to ensure that the total number of married women in the 15-49 age group corresponds to the total given in the 1941 Census.

SECOND METHOD. This involves breaking down the married women from a ten-year age group into two five-year age groups. The 1931 Census⁷ gives this breakdown for married women between 15 and 24 years of age. We used graphic interpolation for the other age groups.

The relative difference between results obtained using these two methods is not very great in most instances: for the 42 estimates we calculated, the difference was less than 2% in 32 cases, between 2 and 5% in 6 cases and between 8 and 10% in 3 cases. These last three instances were all relative to British Columbia, where numbers are low.

The same sort of information is available for the year 1871 as for the year 1891: the 1931 Census⁸ gives the proportion of married women in the 16-20 age group, 21-30 age group, 31-40 age group and 41-60 age group; the number of married women within these same age groups is also given. We used the same method as for the year 1891. In this instance, however, the difference between the results of the two methods is more pronounced: the difference is of the order of 2% or less for 12 cases out of 28; there is a relative difference ranging from 2 to 10% in 12 cases and in the 4 other cases, the difference is between 10 and 16%.

This estimate was also worked out for Ontario and Québec in 1851. The 1871 Census⁹ gives the married and unmarried female population for

⁵ Vol. I, pp. 432 and following.

⁶ Vol. I, pp. 641 and following.

⁷ Vol. I, pp. 432 and following.

⁸ Vol. I, pp. 426 and following.

⁹ Vol. IV, pp. 184 and following.

the following age groups: 15-19 years, 20-29 years, 30-39 years and 40-49 years. These data enable us to use the two methods given above. The difference between the results using these two methods is of the same order of magnitude as for the year 1871. It is particularly marked for the 20-24 and 25-29 age groups (15 to 20% roughly). However, since these two age groups have proximate fertility rates, this has relatively little effect on the fertility tables as we estimated them. For the other age groups, the relative difference is 8% or less.

The results of these estimates appear in Tables D.2 and D.3. The former gives the numbers of married women by five-year agegroups, and the latter gives the proportion of married women to married and unmarried women for the same age groups.

**Table D.2 – Number of married women, by five-year age groups,
Canada and selected provinces, 1851, 1871, 1891 and 1911**

Year and region	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1851							
Québec	5.5	17.6	25.9	20.4	16.4	14.4	11.8
Ontario	6.0	21.8	29.5	23.3	18.0	14.8	11.4
1871							
Canada	15.0	61.3	89.3	85.2	75.2	63.0	52.6
Nova Scotia	0.9	6.0	9.3	8.9	7.8	6.6	5.8
Québec	5.2	20.0	29.8	27.4	24.3	21.0	17.0
Ontario	5.4	26.8	42.4	40.6	35.1	28.9	23.7
1891							
Canada	11.7	78.9	122.2	119.5	105.8	91.2	75.8
Nova Scotia	0.8	6.1	9.7	9.5	9.1	8.6	7.6
Québec	4.5	26.5	37.0	36.4	32.4	27.4	23.1
Ontario	4.0	32.9	55.8	53.9	47.8	41.0	34.3
Manitoba	0.4	3.3	4.6	4.5	3.5	2.6	1.9
British Columbia	0.7	2.0	2.7	2.5	1.9	1.5	1.2
1911							
Canada	23.1	128.5	192.3	190.0	170.0	143.0	121.4
Nova Scotia	1.3	7.3	11.0	11.1	11.1	9.6	8.6
Québec	5.4	35.7	51.0	49.6	44.3	36.7	31.8
Ontario	7.3	41.2	66.1	67.9	63.7	56.6	49.1
Manitoba	1.9	10.3	14.5	13.5	11.2	8.9	7.0
Saskatchewan	2.5	12.0	16.4	14.8	11.3	8.2	6.1
British Columbia	1.4	7.1	11.2	11.3	9.4	7.4	5.6

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**Table D.3 – Proportion of married women, by five-year age groups,
Canada and selected provinces, 1851, 1871, 1891 and 1911**

Year and region	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1851							
Québec	10.2	42.3	79.0	81.1	80.9	83.8	82.9
Ontario	10.8	49.7	84.6	85.9	84.6	87.2	83.9
1871							
Canada	7.3	34.2	62.0	75.8	80.1	82.3	78.9
Nova Scotia	4.2	30.7	57.1	68.8	77.2	81.5	75.4
Québec	7.7	33.9	63.9	78.5	79.9	82.2	80.8
Ontario	6.0	35.1	68.3	81.6	86.1	88.4	82.0
1891							
Canada	4.5	32.9	62.3	75.5	80.0	80.1	78.9
Nova Scotia	3.2	28.3	57.9	72.0	78.1	78.0	75.8
Québec	5.7	38.1	64.8	76.0	79.3	78.7	78.3
Ontario	3.4	29.1	60.4	74.4	80.3	80.0	80.4
Manitoba	5.7	45.7	74.5	86.7	88.4	88.4	88.5
British Columbia	19.8	54.2	74.8	87.8	85.8	83.4	84.2
1911							
Canada	7.0	39.9	66.6	77.3	80.7	80.7	79.2
Nova Scotia	5.1	33.8	62.3	75.4	79.5	79.8	79.3
Québec	5.4	39.0	66.6	77.2	80.4	79.7	78.8
Ontario	6.2	34.8	61.3	72.9	77.1	78.1	76.3
Manitoba	8.9	47.2	71.6	82.3	87.0	87.6	85.7
Saskatchewan	13.6	60.2	82.1	90.3	91.8	90.1	88.1
British Columbia	11.8	51.0	73.3	80.8	84.5	83.8	83.9

E. ESTIMATE OF "ALL MARITAL STATUS" AND LEGITIMATE FERTILITY BY AGE, CANADA AND PROVINCES, 1851, 1871, 1891 AND 1911

The estimates of age-specific fertility that we will arrive at do not claim to be absolutely exact. The figures are indirect and plausible estimates. First of all, we estimated legitimate fertility rates by five-year age groups and from this it is easy to estimate general age-specific fertility rates, with the use of the known proportion of married women.

LEGITIMATE FERTILITY RATES

First of all, we had to estimate the number of married women by five-year age groups (see Appendix D). We also have an estimate of the annual number of births. The method we used consists essentially of finding a series of legitimate fertility rates which, applied to the population of married women, gives the number of births which we had evaluated elsewhere. We supposed all births to be legitimate. The error brought on by this hypothesis is certainly less serious than errors derived from the more risky procedure we had to utilize, so that it would have been superfluous to take illegitimate births into account (these are unknown anyway) and their distribution by age of mother. The following are some details on the method we did use:

(1) By multiplying the population of married women for each age group, in 1911, by the legitimate fertility rates for 1921 (the latter drawn from vital statistics), we get a certain number of births, which we shall call N' .

(2) Let us call N the number of actual births in 1911. The ratio N/N' is the value by which all the 1921 rates must be multiplied to obtain the 1911 rates that would give N number of births.

(3) In fact, we imposed some supplementary constraints. We did not accept a rate above 510 per 1,000 for the 15-19 and 20-24 age groups; we also limited to 500 per 1,000 the rates for women in the 25-29 age group.¹ Furthermore, some graphic adjustments were made to give to the curves representing age-specific legitimate fertility the regularity that they usually exhibit.

¹ These maxima are justified by the estimates of the fertility of married women who are not practising voluntary birth control. See Louis Henry, "Some Data on Natural Fertility", in *Eugenics Quarterly*, Vol. 8, No. 2, June 1961, p. 84. It is true that much higher rates have been frequent in Canada over recent years. This phenomenon must have been due either to the fact that a large proportion of the married women were newly-weds or a quite appreciable number of pre-marital conceptions.

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This gives the legitimate fertility rates sought for the year 1911. We proceeded in the same manner for other years, going back to 1871 for Canada and for most provinces and back to 1851 for Québec and Ontario. The results of these estimates will be found in Table E.1.

Table E.1 – Legitimate^a age-specific fertility rates, Canada and selected provinces, 1851, 1871, 1891, 1911 and 1921

Region and year	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Canada							
1871	510	510	500	465	400	184	25
1891	510	500	440	330	224	103	14
1911	510	480	381	286	194	89	12
1921 ^c	473	397	301	226	153	71	10
Nova Scotia							
1871	510	510	500	475	378	172	18
1891	510	510	487	360	249	113	12
1911	510	485	391	288	199	90	9
1921 ^b	498	381	281	208	144	65	7
Québec							
1851	510	508	486	420	289	152	18
1871	510	508	500	460	305	160	19
1891	510	508	466	372	247	129	15
1911	510	508	442	352	234	122	14
1921 ^c	510	490	425	340	225	118	14
Ontario							
1851	510	500	470	423	313	116	16
1871	510	510	500	465	344	128	17
1891	510	490	383	273	182	72	10
1911	506	463	325	232	154	61	8
1921 ^b	506	367	258	184	122	48	6
Manitoba							
1891	510	505	500	484	410	231	30
1911	510	485	385	275	208	92	18
1921 ^b	456	382	284	203	153	68	13
Saskatchewan							
1911	510	500	441	345	252	121	23
1921 ^b	395	359	258	202	147	70	13
British Columbia							
1891	510	500	448	324	200	78	9
1911							
1921 ^b	356	300	206	149	92	36	4

^a Annual number of births per 1,000 married women.
Table 6.

^c See Appendix C.

^b DBS, *Vital Statistics*, 1943,

In interpreting these results, their arbitrary character should not be overlooked. For example, the fact that in 1851, Québec had a higher rate than Ontario for women in the 25-29 age group and a slightly lower rate for the two next age groups is probably insignificant. We stated earlier that these were plausible rates only. Essentially, the factor leading to the most serious error remains the evaluation of the number of births. In this regard, it is somewhat disquieting to note that in the cases of Ontario and of Québec, legitimate fertility would be lower in 1851 than in 1871. There are a good many ways of explaining this anomaly: either the estimate of births for 1871 was too high, which would be rather surprising in so far as Québec is concerned at any rate, or else the 1851 estimate was too low, and this may well have been the case.² Finally, there is another explanation which may be brought forward: we perhaps over-estimated the number of women who were married in 1851, particularly among the younger women. Whatever be the case, the difference between the 1851 and the 1871 fertility rates is not a major one. We figured that in the case of Ontario (where the difference is the greatest), on applying the 1871 rates to the women married in 1851, the number of births works out to be only 6.4% higher than the figure we used (48,102 instead of 45,211). It may well be that we underestimated the number of births in that province, in 1851, by 6.4%.

In no instance do we find, beyond 25 years of age, the fertility rate observed in the eighteenth century. The rates were then 493 per 1,000 between 15 and 19 years, 509 for 20-24 years, 496 for 25-29 years, 484 for 30-34 years, 410 for 35-39 years, 231 for 40-44 years and 30 for 45-49 years.³ There was one exception however, namely, Manitoba, where the fertility rate in 1891 would have been the same as amongst Canadians in the early eighteenth century.

FERTILITY RATES ("ALL MARITAL STATUS")

Because we suppose all births to have been legitimate, it is easy to pass from legitimate fertility to "all marital status" fertility: multiply the legitimate fertility rates in each age group by the proportion of married women.⁴ The results are the rates found in Table E.2.

² It will be remembered that we made no correction, that year, for the under-enumeration of children aged 0-9.

³ See J. Henripin, *La population canadienne au début du XVIIIe siècle*, Paris, P.U.F., 1954, p. 60.

⁴ See Appendix D.

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Table E.2 – Age-specific fertility rates,^a Canada and selected provinces, 1851, 1871, 1891, 1911 and 1921

Region and year	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Canada							
1871.....	37	174	310	353	320	152	20
1891.....	23	165	274	249	179	83	11
1911.....	36	192	254	221	156	72	10
1921 ^c	37	174	211	181	127	58	8
Nova Scotia							
1871.....	21	157	286	327	292	140	13
1891.....	16	145	282	259	194	88	9
1911.....	26	164	243	218	159	72	7
1921 ^b	34	154	189	163	118	53	5
Québec							
1851.....	52	215	384	341	234	127	15
1871.....	39	172	320	361	244	132	15
1891.....	29	194	302	283	196	102	12
1911.....	28	198	294	272	188	98	11
1921 ^c	34	194	282	261	182	95	11
Ontario							
1851.....	55	248	398	363	265	101	13
1871.....	31	179	341	380	296	113	14
1891.....	17	143	231	203	146	58	8
1911.....	32	161	199	169	119	48	6
1921 ^b	35	150	173	143	98	39	5
Manitoba							
1891.....	29	231	373	419	362	204	27
1911.....	45	229	276	226	180	80	15
1921 ^b	42	184	211	170	132	59	11
Saskatchewan							
1911.....	69	301	362	311	231	109	20
1921 ^b	46	211	214	182	135	64	12
British Columbia							
1891.....	101	271	336	285	171	65	8
1911.....	60	229	242	193	124	48	6
1921 ^b	26	141	152	126	79	31	4

^a Annual number of births per 1,000 women of "all marital status".
Statistics, 1951, Table 6.

^c See Appendix C.

^b DBS, *Vital*

F. FERTILITY OF COHORTS BORN BETWEEN 1901 AND 1930

1. MEASURES BASED ON VITAL STATISTICS

The method we used is not as rigorous as that used by other authors.¹ We shall first explain the method, and then examine the ways in which it lacks precision.

1. First of all, for each of the years for which vital statistics were available, we estimated fertility rates *by individual age*. These rates could be calculated directly for the census years 1931 to 1961. For the other years, we interpolated the rates for five-year age groups, based on the fertility tables for the census years we have just mentioned. The curve resulting from these tables is very regular and there is no great risk of error in the interpolations.²

2. This gives fertility rates for each year of age for each year between 1921 and 1963. This only allows us to follow a limited number of cohorts between 15 and 49. Indeed, in keeping to these data, the first cohort whose fertility can be measured is the one aged 15 in 1921 and 49 in 1955; the last is the one aged 15 in 1929 and 49 in 1963 (the last year for which fertility rates were known at the time we worked out these calculations). In all, we thus have only nine cohorts that are complete. We extrapolated certain rates so that we might go back to the cohort which was 15 years of age in 1916 and so reach, at the other end, the one that was 15 years old in 1945 and was still only 33 years old in 1963. This means that, in the latter instance, we had to estimate the fertility beyond age 33, and this involves some possibility of error. Extrapolation for the cohorts that were at least 40 years old in 1963 did not give rise to any serious problems because the fertility rates are very low beyond that age, so that completed fertility is not greatly affected even where there are relatively important errors.

¹ See more particularly, P.K. Whelpton, *Fertility Tables for Birth Cohorts of American Women: Part 1*, US Department of Health, Education and Welfare, Vital Statistics — Special Reports, Selected Studies, Vol. 51, No. 1, Jan. 29, 1960.

² We might have followed a different procedure. For each year, the distribution of births by age of mothers (for each year of age) is known. We might have interpolated the populations of five-year age groups to obtain the number of women in each year of age and then calculate the age-specific fertility rates. The latter method did not appear to present any great advantage over the method we used.

3. The problem is a good deal more delicate in the case of cohorts who were between 34 and 40 years of age in 1963. To complete the fertility of these cohorts, we used two different methods.

(a) **EXTRAPOLATION OF RATIOS OF FERTILITY UP TO AGE X/COMPLETED FERTILITY.** We worked out the evolution in the ratios of cumulative fertility up to age X over the completed fertility (up to 49 years) for the preceding cohorts. We projected this evolution to obtain an estimate of ratios applicable to the cohorts of interest to our study. Here are the ratios we worked out:

Age reached by the cohort in 1963	Ratio
33 years	.811
34 "	.849
35 "	.880
36 "	.906
37 "	.935
38 "	.948
39 "	.960
40 "	.972
41 "	.981

It will be seen that there are only three cohorts in respect of which the missing fertility fraction exceeds 10%.

(b) **EXTRAPOLATION OF FERTILITY RATES BY INDIVIDUAL AGE.** Between 1953 and 1963, the fertility rates of women aged 34 and over follow a regular evolution pattern that enables us to draw therefrom some rather clear trends. We projected these trends into the future: the fertility rate for 34 years is of use only in 1964; that for 35 years can be used up to 1965, etc., and that for 49 years must be projected as far forward as 1979.

The results of these estimates appear in Table F.1.

Two major criticisms may be formulated in regard to this method of estimation:

1. These are what might be called *open cohorts*, namely groups of women who, as they age, receive new members (immigrants) into their group and lose others (emigrants and deaths). Rigorously speaking, the group is not constituted of the same individuals over a given period of time.

2. The second criticism is somewhat more technical. Our cohorts are not rigorously precise and indeed, overlap. In fact, all women belong to two different cohorts, so that our results are rather comparable to the result

Table F.1 – Cohort fertility rates of women born between 1901 and 1930, Canada

Year of birth of cohort ^a	Completed fertility ^b	Year of birth of cohort ^a	Completed fertility ^b	Year of birth of cohort ^a	Completed fertility ^b	
					First method	Second method
1901	3.143	1911	2.770	1921	3.183	3.183
1902	3.080	1912	2.782	1922	3.242	3.243
1903	3.036	1913	2.806	1923	3.276	3.277
1904	2.983	1914	2.844	1924	3.301	3.309
1905	2.931	1915	2.878	1925	3.325	3.331
1906	2.895	1916	2.915	1926	3.324	3.333
1907	2.866	1917	2.964	1927	3.381	3.352
1908	2.832	1918	3.021	1928	3.437	3.386
1909	2.808	1919	3.078	1929	3.506	3.424
1910	2.787	1920	3.134	1930	3.616	3.476

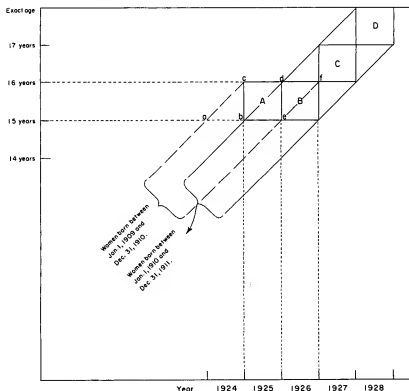
^a In fact, these are women born between January 1 of the year just prior to the indicated year, and December 31 of the indicated year.

^b Number of children born on average, to each woman in the indicated cohort.

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of a mobile average with two elements. This can be verified with the diagram shown here. The ordinate represents the age of women, and the abscissa, the calendar years.

LEXIS DIAGRAM ILLUSTRATING HOW FERTILITY RATES HAVE BEEN ATTRIBUTED TO THE VARIOUS COHORTS



In a diagram of this type (called a Lexis diagram), one square stands for the events as classified in vital statistics, so that square A represents the events (births, for instance) in the lives of women who were between 15 and 16 years of age in 1925. On the other hand, the events affecting a cohort are those included within a diagonal corridor; for instance, the births in the lives of women born between January 1, 1910 and December 31, 1911 are within the corridor enclosed within the two diagonal full lines. In our calculation of cohort fertility, we attributed the fertility rates provided by vital statistics for women aged 15 in 1925 (square A) to the cohort born between January 1, 1909 and December 31, 1910. It will be noted that the women in this cohort bore children, while between 15 and 16 years of

age, that are not within square A: these are the births within the triangles abc and def. We overlooked these births in our calculations. The completed fertility of the 1911 cohort (women born between January 1, 1910 and December 31, 1911) would be represented on our diagram by the succession of squares B,C,D, etc. We can also observe the overlapping of cohorts in the diagram: thus, women born between January 1, 1910 and December 31, 1910, are part of the two cohorts illustrated here.

2. MEASUREMENT BASED ON 1941 AND 1961 CENSUS DATA

With the information used up to now, we cannot go back into the past, beyond the 1901 cohort. However, we can roughly estimate the fertility of previous cohorts by using a certain information from the 1941 and 1961 Censuses. These provide information relating to the number of live-born children to ever-married women over the course of their lifetime. In Table F.2, we estimated with this information the fertility of all women (ever married or not). We used the information from the 1961 Census for the cohorts whose age was between 40 and 60 in 1961 (20 to 40 years in 1941) and the information from the 1941 Census for the preceding cohorts (40 years and over in 1941). The procedure is easy to follow in Table F.2. The fertility of ever-married women (Column 1) must be multiplied by the proportion of women ever married (Column 2), and this gives the figures in Column 3. But we must add the illegitimate births which are not included (at least a fraction thereof is not) amongst the children born of ever-married women. We thus obtain the results in Column 5. In Column 6 is the year of birth of women whose age corresponds to the average age of the age groups indicated in the first column of that table.

3. COMPARISON OF THE TWO METHODS

The results we have just found can be compared with the results based on vital statistics, for the years 1904, 1909, 1914, and 1919. As Table F.3 indicates, our estimate based on census data is higher than the one based on vital statistics: the difference passes from 5.2% in 1904 to 3.5% in 1914, then drops rapidly to 1.4% for the 1919 cohort. To what can this difference be due? A number of explanations may be put forward:

1. We probably added too large a number of illegitimate births. A fraction thereof, and perhaps quite a substantial fraction, were perhaps the children of single women who married later, and are therefore counted in the fertility of ever-married women. It would suffice that a quarter of the illegitimate births be attributed to ever-married women to pretty well wipe out the difference in the 1919 cohort. This does not explain the difference for the other cohorts however: all illegitimate births would have to be treated

Table F.2 - Estimation of cohort fertility rates of women born between 1874 and 1919, based on the 1941 and 1961 Census data

Cohort	Number of children born to 1,000 ever-married women ^a	Proportion of ever-married women ^b	Column 1 × Column 2	Proportion of legitimate births ^c	Number of children born to 1,000 women (married or not): Column 3 + Column 4	Year of birth of cohort corresponding to the average age
	1	2	3	4	5	6
40-44 years in 1961	3,258	0.911	2,968	0.961 ^e	3,120 ^j	1919
45-49 " " "	3,138	0.905	2,840	0.965 ^f	2,943	1914
50-54 " " "	3,188	0.896	2,856	0.970 ^g	2,944	1909
55-59 " " "	3,411	0.896	3,056	0.974 ^h	3,138	1904
40-44 " " " 1941	3,795	0.870	3,302	0.978 ⁱ	3,444 ^j	1899
45-49 " " "	4,090 ^d	0.888	3,632	0.978	3,714	1894
50-54 " " "	4,240 ^d	0.897	3,805	0.978	3,891	1889
55-59 " " "	4,345 ^d	0.902	3,919	0.978	4,007	1884
60-64 " " "	4,440 ^d	0.896	3,978	0.978	4,067	1879
65-69 " " "	4,535 ^d	0.888	4,027	0.978	4,118	1874
70 years and over	4,818	—	—	—	—	—

^a DBS, *Census of Canada, 1961*, Bulletin 4.1-8, Table H1; DBS, *Census of Canada, 1941*, Vol. III, Table 51, p. 682-3. Since this calculation, the 1961 Census data have been slightly adjusted. The rates used here are slightly higher than the published rates. ^b DBS, *Census of Canada, 1961*, Bulletin 1.3-1, p. 78-1 and 2; DBS, *Census of Canada, 1941*, Vol. III, p. 94-5. ^c DBS, *Vital Statistics, 1951*, p. 19. ^d Interpolation.

^e Proportion of the years 1931-1945. ^f Proportion of the years 1926-1940. ^g Proportion of the years 1921-1935. ^h Proportion of the years 1921-1930. ⁱ Proportion of the years 1921-1925. ^j The result has been increased by 1% for women aged 40-44 in 1961 and by 2% for women aged 40-44 in 1941, to take into account the fact that these women had not yet completed their fertility.

**Table F.3 – Cohort fertility rates for 1904, 1909, 1914 and 1919:
comparison of the results of two methods**

Year of birth of cohort	Completed fertility ^a from		Relative difference ^b %
	Vital statistics	Census	
1904	2,983	3,138	5.2
1909	2,808	2,944	4.8
1914	2,844	2,943	3.5
1919	3,078	3,120	1.4

^a Number of live-born children per 1,000 women who completed their fertility.

^b As compared with estimates based on vital statistics.

in the same way to wipe out the difference in the case of the 1914 cohort. In the other instances, all of the illegitimate births would not suffice.

2. It may be that vital statistics underestimated the fertility rates before 1940 or 1945. The 1914 cohort and its predecessors bore most of their children before that date. Now it would seem that the underregistration of births was more prevalent before 1940 than after. Enid Charles³ reports that surveys indicated that under-registration amounted to about 6% in 1931 and 3% in 1941. This may partially explain the difference between the 1919 cohort and its predecessors.
3. To the extent that the more fertile women have a lower death rate than the others, census data are biased: amongst the survivors, observed in the census, the more fertile women would be over-represented and vice versa. It would be surprising, however, if this selection – if it does, in fact, exist – were to fully explain the differences between the two estimates.
4. One final reason is related to migrations. Vital statistics measure the fertility of women residing in Canada *at the time of birth* whereas census statistics deal with women residing *at the time of the census*. Therefore, the census cohorts include women who did not bear their children in Canada and these births could not be covered by vital statistics. On the other hand, the women who bore their children in Canada (and whose births were recorded by vital statistics) and then emigrated, would not have been covered

³ In *The Changing Size*. . . , *op. cit.*, p. 14.

by census statistics. It is quite possible that it is more particularly immigrants who bore their children before they came to Canada that are in question here. If these immigrant women have borne more children than those women whose births occurred in Canada, this might explain – partially, at least – the difference between the two estimates. These would, therefore, more particularly be women who immigrated to Canada after the last war and after they were 35 years of age. The effect of this phenomenon would be greater still if the women who bore their children in Canada, and emigrated later, had borne fewer children than the women who remained in Canada, and this is far from impossible.

Obviously, a good many reasons may be brought forward to explain the disparity between the results of the two estimates. It is even rather surprising that this disparity is not more pronounced. It is impossible to measure accurately the role played by one or the other of the several reasons given. The first reason may explain virtually all of the difference observed for the 1919 cohort and perhaps a quarter or a third of the relative differences in regard to the other cohorts. The other differences must be due to the second and fourth reason given.

G. METHOD USED TO ESTIMATE THE INFLUENCE OF AGE DISTRIBUTION, NUPTIALITY, LEGITIMATE AND ILLEGITIMATE FERTILITY ON THE VARIATIONS IN GENERAL FERTILITY

We must break down the variation in the general fertility rate¹ by estimating that part in the variation attributable to each one of four immediate factors: age distribution of women aged 15-49, proportion of married women, legitimate fertility and illegitimate fertility. The method we used applies to two types of variations: (a) those occurring, in a given region, from one year to another; (b) the differences observed, in a given year, between each province and Canada. The method is the same in both cases, but we shall use slightly different symbols. Furthermore, the method has been applied somewhat differently in various instances; it was in the case of the variations for Canada as a whole, from one census to another, between 1921 and 1961, that the method was most carefully applied and our study will bear, first of all, on this aspect of the calculations. We shall later indicate the changes introduced in other cases.

1. **VARIATIONS IN TIME, CANADA, 1921 TO 1961.** Let us first define the symbols used to designate the phenomena which we want to measure:

- V_T : variation in the general fertility rate;
- V_A : variations that may be ascribed to changes in age distribution;
- V_N : variations that may be ascribed to changes in nuptiality;
- V_L : variations that may be ascribed to changes in legitimate fertility;
- V_I : variations that may be ascribed to changes in illegitimate fertility;

These measurements take the form of ratios between the figure for a census year and the figure for the preceding census year. To facilitate the calculations, we took simultaneously into account only the three first factors, namely A, N, and L. The influence of illegitimate fertility is very minor and has been dealt with separately. Several elements enter into the calculations and the following symbols will be used to represent them:

- N: total number of live births;
- F: number of women within a 5-year age group;
- M: number of married women in a 5-year age group;
- m: proportion of married women in a 5-year age group;
- f: fertility rates (married and unmarried women) of a 5-year age group;
- l: legitimate fertility rates of a 5-year age group.

These symbols will be used in conjunction with digits 0 to 1 or the letter s (which appear in the lower right-hand position), which will have the

¹That is the annual number of births divided by the number of women aged 15-49.

following signification: 0 designates the year at the outset of the period during which the variations are studied; 1 designates the year at the end of the period; \bar{s} stands for the average of the years 0 and 1.

The general fertility rate is then represented by the following equation:

$$\frac{N}{\Sigma F} = \frac{\Sigma(F \cdot f)}{\Sigma F}$$

and the ratio of the rates for the year 1 to the rate for the year 0 is represented by the following equation:

$$V_T = \frac{\Sigma(F_1 \cdot f_1)}{\Sigma F_1} \div \frac{\Sigma(F_0 \cdot f_0)}{\Sigma F_0} = \frac{\Sigma(F_1 \cdot f_1)}{\Sigma(F_0 \cdot f_0)} \cdot \frac{\Sigma F_0}{\Sigma F_1}$$

To measure variations that can be ascribed to the factors A, N, and L, we used two series of measurements: the first series corresponds to the direct measure of the influence of these factors; the second to an indirect measure or one reached at by deduction. The following are the formulae for the direct measure:

$$V_A = \frac{\Sigma(F_1 \cdot f_s)}{\Sigma(F_0 \cdot f_s)} \cdot \frac{\Sigma F_0}{\Sigma F_1}$$

In other words, by applying standard fertility rates (f_s) to the female population by age groups for each of the years compared, the difference between the results, taking into account the total female population aged

15-49 $\left(\frac{\Sigma F_0}{\Sigma F_1} \right)$, is only due to the difference in age distribution. To measure

the influence of variations in the proportion of married women in different age groups, we will have the following formula, where the number of women (F_s) and the legitimate fertility rate (l_s) are standard:

$$V_N = \frac{\Sigma(F_s \cdot m_i \cdot l_s)}{\Sigma(F_s \cdot m_0 \cdot l_s)}$$

Finally, to measure the variations that may be ascribed to changes in legitimate fertility, it is the number of women (F_s) and the proportion of married women (m_s) that will be kept constant. The formula will be:

$$V_L = \frac{\Sigma(M_s \cdot l_i)}{\Sigma(M_s \cdot l_0)}$$

We do not claim this to be a fully satisfactory series of formulae, from a mathematical viewpoint. There are two reasons for this: first of all, illegitimate fertility is not taken into account in these formulae; taking this

element into account would involve the introduction of such elaborate calculations that we deemed them unnecessary. Very likely no coherent series of formulae can be worked out. However, in practice, there is not so wide a gap from this ideal situation.

This also explains why we used another series of formulae to calculate the same variations in an indirect manner. This method of measurement consists in directly measuring the influence of the factors other than the one which we are examining and, from these, measure that particular factor by deduction. For instance, if we are concerned with trying to measure the influence of variations in age distribution, we measure, first of all, the combined influence of the variations in nuptiality and in legitimate fertility (complementary factors) and deduce therefrom the influence of age distribution. The following are the formulae used to directly measure the influence of the variations in the complementary factors:

in the case of V_A (complementary factors N and L):	$\frac{\Sigma(F_S \cdot f_1)}{\Sigma(F_S \cdot f_0)}$
in the case of V_N (complementary factors A and L):	$\frac{\Sigma(F_1 \cdot m_S \cdot l_1)}{\Sigma(F_0 \cdot m_S \cdot l_0)} \cdot \frac{\Sigma F_0}{\Sigma F_1}$
in the case of V_L (complementary factors A and N):	$\frac{\Sigma(F_1 \cdot m_1 \cdot l_S)}{\Sigma(F_0 \cdot m_0 \cdot l_S)} \cdot \frac{\Sigma F_0}{\Sigma F_1}$

On the basis of the results of these formulae, we deduced the influence of the factor involved by using the following equation: $V_T = V_A \cdot V_N \cdot V_L$ ². For instance, the influence of variations in age distribution is arrived at by using the following formula:

$$V_A = \frac{V_T}{V_N \cdot V_L}$$

with $V_N \cdot V_L$ being the result of the first of the three formulae stated. The purpose of indirect measurement had been to discover whether results based on this method would differ greatly from results obtained by using direct measurement. Table G.1 indicates the difference to be negligible. For V_A , it does not exceed 0.1%; for V_N , it varies between 0.7 and 1.4% and for V_L , it varies between 0.6 and 1.1%.

²This equation cannot be justified mathematically; first of all because it leaves out illegitimate fertility; and secondly because the different factors are not as simply related to one another as this would indicate.

Table G.1 – Ratios measuring the fertility variations imputable to various factors, Canada, 1921 to 1961

Period and method	Factors			
	Age distribution (V _A)	Married proportion (V _N)	Legitimate fertility (V _L)	Product of the three factors
1921-1931				
Direct method .....	.9657	.9385	.8478	.7684
Indirect method .....	.9651	.9505	.8581	.7872
Average .....	.9654	.9445	.8529	.7777
1931-1941				
Direct method	1.0283	1.0125	.8935	.9303
Indirect method	1.0293	1.0056	.8874	.9185
Average	1.0288	1.0090	.8904	.9243
1941-1951				
Direct method	1.0097	1.1838	1.0390	1.2419
Indirect method	1.0095	1.1972	1.0506	1.2697
Average	1.0096	1.1904	1.0448	1.2557
1951-1961				
Direct method .....	.9296	1.0861	1.0055	1.0152
Indirect method .....	.9298	1.0944	1.0131	1.0309
Average .....	.9297	1.0903	1.0093	1.0231

Variations in fertility attributable to changes in illegitimate fertility have been measured in a more summary manner. We estimated the relative increase in births due to a variation in illegitimate fertility between two years. The rate of illegitimate fertility (i) was calculated by dividing the number of illegitimate births (N^i) by the number of women aged 15-49: $i = N^i / \Sigma F$. The increase in the number of illegitimate births is equal to $F_s (i_1 - i_0)$ and the relative increase is equal to the latter formula divided by N_s , that is to say by the average number of births in the year 0 and the

year 1. The result is: $V_i = 1 + \frac{F_s(i_1 - i_0)}{N_s}$

We obtain the following results for Canada: 1921-1931: 1.0057; 1931-1941: 1.0019; 1941-1951: 1.0076; 1951-1961: 1.0079. Obviously, this factor only plays a very minor part.

It is interesting to see how the total effect of the four factors can be compared with the total variation in fertility measured directly by

$$V_T = \frac{\Sigma(F_1 \cdot f_1)}{\Sigma(F_0 \cdot f_0)} \cdot \frac{\Sigma F_0}{\Sigma F_1}$$

This comparison will be found in Table G.2. In this table, we kept the average of the two methods as a measure of the influence of the three main factors (A, N and L). The differences vary between 0.1% and 1%. This difference is relatively slight, as compared to the total variation in fertility, for the first three periods although this difference is relatively important for the last period because, in this instance, it is 50%. Since we only used the direct method in working out calculations for the provinces, it is interesting to make the comparison outlined above using the direct method alone for the factors A, N and L rather than the average of the direct and indirect methods. The differences between the total effect of the four factors and the total variation would then work out as follows: 1921-1931: .0040; 1931-1941: .0069; 1941-1951: .0098; 1951-1961: .0021. As a whole, agreement between total variation and the product of the four factors is scarcely less satisfactory.

Table G.2 – Comparison of the effect of the four factors with the total fertility variation, Canada, 1921 to 1961

Period	$V_A \cdot V_N \cdot V_L^a$	V_I	$V_A \cdot V_N \cdot V_L \cdot V_I$	V_T	Col. 3 - Col. 4
	1	2	3	4	5
1921-1931 ....	.7777	1.0057	.7822	.7768	.0054
1931-1941 ....	.9243	1.0019	.9261	.9252	.0009
1941-1951	1.2557	1.0076	1.2652	1.2610	-.0042
1951-1961	1.0231	1.0079	1.0311	1.0211	.0100

^aTable G.1, average of the two methods.

2. VARIATIONS IN TIME, PROVINCES, 1921-1961. We used the same procedure as for Canada, except that we used only the direct method.

3. VARIATIONS IN TIME, CANADA AND PROVINCES, 1851-1921. We are here obliged to leave aside the factor V_I (illegitimate births). We estimated V_A and V_N in the same way as previously; but V_L was obtained by deduction, assuming that $V_T = V_A \cdot V_N \cdot V_L$.

4. COMPARISON OF THE PROVINCES WITH CANADA, 1921-1961. The method is basically the same as for variations in time within the provinces between 1921 and 1961. The only differences reside in the fact that instead of relating the year 1 to the year 0, the figure for a province is related to the figure for Canada and it is not the average for the two years compared which is the standard but, instead, the figures for Canada. The following are the formulae, where *c* designates Canada and *p* the provinces:

$$V_T = \frac{\Sigma(F_P \cdot f_P)}{\Sigma(F_C \cdot f_C)} \cdot \frac{\Sigma F_C}{\Sigma F_P} = \frac{N_P}{N_C} \cdot \frac{\Sigma F_C}{\Sigma F_P}$$

$$V_A = \frac{\Sigma(F_P \cdot f_C)}{\Sigma(F_C \cdot f_C)} \cdot \frac{\Sigma F_C}{\Sigma F_P}$$

$$V_N = \frac{\Sigma(F_C \cdot m_P \cdot l_C)}{\Sigma(F_C \cdot m_C \cdot l_C)}$$

$$V_L = \frac{\Sigma(M_C \cdot l_P)}{\Sigma(M_C \cdot l_C)}$$

$$V_I = 1 + \frac{F_C(i_P - i_C)}{N_C}$$

5. COMPARISON OF THE PROVINCES TO CANADA, 1851-1911. The factor V_I was ignored and V_L was deduced from the equation $V_T = V_A \cdot V_N \cdot V_L$.

H. DEGREE OF ACCURACY IN THE CLASSIFICATION OF WOMEN EVER MARRIED BY THEIR AGE IN 1961, DURATION OF MARRIAGE AND THEIR AGE AT MARRIAGE

The 1961 Census provides the following information about each woman ever married:

1. her age as of June 1, 1961, in completed years (with a possible difference of one year between the exact actual age and the age indicated);
2. the date of her first marriage (with a possible error of six months);
3. the duration of her marriage,¹ by calculating the time lapsed between the date of her marriage and June 1, 1961 (with a possible six-month error);
4. her age at first marriage, by subtracting the duration of her marriage from her age at June 1, 1961 (here, the possible deviations between the two elements in the subtraction are cumulative, so that the potential deviation between reality and the results of the calculation is of the order of eighteen months).

We did not have recourse to all the possible exactness in regard to the date of marriage so as to reduce the volume of data; the date of marriage was classified by one-year periods instead of six-month periods, the years starting on June 1 and ending on May 30.

BASIC INFORMATION

It is important to indicate quite precisely the manner in which the data we are going to use are presented, so that the reader can assess its degree of exactness. The basic statistical tables have been reproduced further on in the text (H.2 and H.3). They list the number of live-born children per 1,000 women ever married by their age in 1961 (15, 16, 17. . . , 39 years, 40-44, 45-49. . . 70-74 years, 75 years and over) and by duration of the marriage (0.5, 1.5, 2.5 . . . , 24.5, 25-30, 30-35 years, 35 years and over). We reproduce here a model for one of these tables in order to facilitate the appreciation of the exactness of the data they contain. The age in 1961 is indicated in completed years: 15 years means 15 to 16 years and,

¹In fact, this is the time lapsed between date of first marriage and June 1, 1961; this time only corresponds to the duration of marriage in the case of women whose first marriage has not been broken.

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on average the women of this age are about 15.5 years old.² This is true up to the age of 39. Beyond that age, the women are classified by five-year age groups and the average age of each group is 42.5 years, 47.5 years. . . , etc. The possible deviation between these average ages and the actual age of the women is therefore six months (from 15 to 39 years) or 2.5 years (40 to 74 years). The duration of marriage is indicated, in the table, by the actual limits; it is given by one-year periods up to 25 years and by five-year periods between 25 and 35 years. Where the limits of each category are replaced by the average duration (0.5 year, 1.5 years. . . , 24.5 years, 27.5 years, and 32.5 years), there is a possible error of six months up to 25 years and a possible error of 2.5 years between 25 and 35 years.

Table H.1 – Model table showing fertility of women by age in 1961, and by duration of marriage

Age in 1961	Duration of marriage (in years)							
	0-1	1-2	2-3 . . . 23-24		24-25	25-30	30-35	35 and over
15 years	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
16 "	<i>i</i>	<i>j</i>						
17 "	<i>k</i>	<i>l</i>	<i>m</i>					
1								
1								
1								
1								
39 "								
40-44 years	<i>n</i>					<i>p</i>		
1								
1								
1								
1								
70-74 "								
75 years and over								

FERTILITY BY AGE AT FIRST MARRIAGE AND DURATION OF MARRIAGE

These data allow us to deduce the age at first marriage by subtracting the duration of marriage from age on June 1, 1961. The women who were

²This is inexact in the case of married women who are very young: at these ages, there are a good many more women whose age is closer to $x + 1$ than to x .

Table H.2 – Number of live-born children per 1,000 women ever married, by their age in 1961 and by duration of marriage,^a Canada, for various types of residence

NOTE: The symbol - means that the number of women involved is less than 50.

Type of residence and age in 1961	Duration of marriage (in years)							
	0.5	2.5	5.5	9.5	14.5	22.5	32.5	35+
All types of residence								
17 years	387	1,556						
22 "	229	1,161	2,433					
27 "	282	1,028	1,984	3,268				
32 "	312	1,092	1,738	2,588	3,800			
40-44 years	316	595	1,130	1,707	2,663	3,944		
50-54 "	398	485	289	403	934	2,354	4,047	4,788
60-64 "	-	-	-	230	390	1,030	2,390	4,248
70-74 "	-	-	-	-	-	-	971	4,167
75 years and over	-	-	-	-	-	-	649	4,307
Metropolitan								
17 years	331	-						
22 "	205	1,030	2,271					
27 "	230	882	1,755	2,895				
32 "	174	922	1,617	2,364	3,216			
40-44 years	227	559	996	1,467	2,370	3,181		
50-54 "	-	364	183	296	693	1,876	3,149	3,769
60-64 "	-	-	-	-	170	838	2,064	3,418
70-74 "	-	-	-	-	-	-	876	3,527
75 years and over	-	-	-	-	-	-	547	3,680
Urban								
5,000-29,999								
17 years	487	-						
22 "	228	1,220	2,467					
27 "	-	1,116	2,082	2,910				
32 "	-	-	1,765	2,593	3,540			
40-44 years	-	-	-	2,029	2,631	3,728		
50-54 "	-	-	-	-	860	2,391	3,973	4,498
60-64 "	-	-	-	-	-	-	2,232	4,327
70-74 "	-	-	-	-	-	-	1,099	4,171
75 years and over	-	-	-	-	-	-	-	4,232
Rural non-farm								
17 years	407	-						
22 "	301	1,332	2,609					
27 "	593	1,384	2,349	3,964				
32 "	-	-	2,416	2,958	4,415			
40-44 years	-	-	1,712	1,886	3,068	4,839		
50-54 "	-	-	-	-	1,411	2,823	4,804	5,757
60-64 "	-	-	-	-	-	-	2,767	5,079
70-74 "	-	-	-	-	-	-	1,046	4,966
75 years and over	-	-	-	-	-	-	595	4,972

See end of table for footnote.

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Table H.2 – Number of live-born children per 1,000 women ever married, by their age in 1961 and by duration of marriage,^a Canada, for various types of residence (Concluded)

Type of residence and age in 1961	Duration of marriage (in years)							
	0.5	2.5	5.5	9.5	14.5	22.5	32.5	35+
Rural farm								
17 years	395	—	—	—	—	—	—	—
22 "	239	1,284	—	—	—	—	—	—
27 "	—	1,246	2,460	3,675	—	—	—	—
32 "	—	—	—	3,208	4,160	—	—	—
40-44 years	—	—	—	2,476	3,459	4,927	—	—
50-54 "	—	—	—	—	—	3,393	5,604	6,315
60-64 "	—	—	—	—	—	—	3,312	5,538
70-74 "	—	—	—	—	—	—	1,080	5,376
75 years and over	—	—	—	—	—	—	—	5,552

^aThis is actually the time lapsed between the date of first marriage and June 1, 1961.

Table H.3 – Number of live-born children per 1,000 women ever married, by their age in 1961 and by duration of marriage,^a Canada, for selected groups of women

Note: The symbol — means that the number of women involved is less than 50.

Group of women and age in 1961	Duration of marriage (in years)							
	0.5	2.5	5.5	9.5	14.5	22.5	32.5	35+
Elementary schooling								
15-19 years	394	1,464	—	—	—	—	—	—
20-24 "	315	1,291	2,400	2,889	—	—	—	—
25-29 "	383	1,172	2,162	3,359	4,316	—	—	—
30-34 "	408	1,238	1,895	2,873	4,049	—	—	—
40-44 "	652	769	1,360	1,921	2,980	4,568	—	—
50-54 "	—	—	—	462	1,190	2,792	4,575	5,233
60-64 "	—	—	—	—	362	1,291	2,769	4,755
70-74 "	—	—	—	—	—	1,071	1,182	4,668
75 years and over	—	—	—	—	—	1,128	756	4,738
Secondary schooling								
15-19 years	322	1,347	—	—	—	—	—	—
20-24 "	229	1,131	2,221	2,778	—	—	—	—
25-29 "	222	974	1,931	2,938	—	—	—	—
30-34 "	267	939	1,731	2,550	3,318	—	—	—
40-44 "	123	506	1,000	1,554	2,486	3,200	—	—
50-54 "	—	372	282	339	716	2,040	3,287	3,615
60-64 "	—	—	—	—	446	561	2,042	3,384
70-74 "	—	—	—	—	—	300	719	3,263
75 years and over	—	—	—	—	—	—	507	3,344

See end of table for footnote.

Table H.3 – Number of live-born children per 1,000 women ever married, by their age in 1961 and by duration of marriage,^a Conado, for selected groups of women (Continued)

Group of women and age in 1961	Duration of marriage (in years)							
	0.5	2.5	5.5	9.5	14.5	22.5	32.5	35+
University								
15-19 years.....	—	—	—	—	—	—	—	—
20-24 ".....	155	900	—	—	—	—	—	—
25-29 ".....	171	892	1,851	2,546	—	—	—	—
30-34 ".....	61	931	1,651	2,621	2,828	—	—	—
40-44 ".....	—	—	—	1,851	2,601	2,886	—	—
50-54 ".....	—	—	—	—	914	2,076	2,671	2,396
60-64 ".....	—	—	—	—	—	894	2,014	2,636
70-74 ".....	—	—	—	—	—	—	—	2,576
75 years and over.....	—	—	—	—	—	—	—	2,522
Immigrant women								
15-19 years.....	212	1,000	—	—	—	—	—	—
20-24 ".....	174	943	1,733	—	—	—	—	—
25-29 ".....	214	903	1,603	2,356	—	—	—	—
30-34 ".....	193	933	1,481	2,166	2,618	—	—	—
40-44 ".....	—	—	1,000	1,462	2,266	2,848	—	—
50-54 ".....	—	—	—	448	648	1,889	3,123	3,604
60-64 ".....	—	—	—	—	—	874	2,045	3,376
70-74 ".....	—	—	—	—	—	—	980	3,538
75 years and over.....	—	—	—	—	—	—	623	3,703
Anglo-Protestant^b								
Urban								
15-19 years.....	321	1,390	—	—	—	—	—	—
20-24 ".....	213	1,060	2,203	—	—	—	—	—
25-29 ".....	242	838	1,828	2,823	—	—	—	—
30-34 ".....	387	918	1,641	2,381	3,187	—	—	—
40-44 ".....	200	602	935	1,416	2,191	2,851	—	—
50-54 ".....	—	—	—	312	682	1,669	2,855	3,480
60-64 ".....	—	—	—	—	—	618	1,635	2,958
70-74 ".....	—	—	—	—	—	—	741	2,953
75 years and over.....	—	—	—	—	—	—	453	3,097
Rural farm								
15-19 years.....	355	—	—	—	—	—	—	—
20-24 ".....	301	1,294	2,509	—	—	—	—	—
25-29 ".....	—	1,139	2,217	3,104	—	—	—	—
30-34 ".....	—	—	1,696	2,775	3,576	—	—	—
40-44 ".....	—	—	—	—	2,742	3,714	—	—
50-54 ".....	—	—	—	—	—	2,324	3,946	5,119
60-64 ".....	—	—	—	—	—	—	2,393	3,938
70-74 ".....	—	—	—	—	—	—	—	3,949
75 years and over.....	—	—	—	—	—	—	—	4,192

See end of table for footnotes.

TRENDS AND FACTORS OF FERTILITY IN CANADA

Table H.3 – Number of live-born children per 1,000 women ever married, by their age in 1961 and by duration of marriage,^a Canada, for selected groups of women (Concluded)

Group of women and age in 1961	Duration of marriage (in years)							
	0.5	2.5	5.5	9.5	14.5	22.5	32.5	35+
French-Catholic^b								
Urban								
15-19 years	300	1,387						
20-24 "	238	1,243	2,258	—				
25-29 "	245	1,071	2,090	3,276	—			
30-34 "	249	945	1,819	2,870	3,993			
40-44 "	—	492	1,067	1,883	2,966	4,593		
50-54 "	—	—	—	180	905	2,849	5,269	6,143
60-64 "	—	—	—	—	—	1,048	3,292	5,896
70-74 "	—	—	—	—	—	—	1,260	6,200
75 years and over	—	—	—	—	—	—	—	6,655
Rural farm								
15-19 years	312	—						
20-24 "	316	1,458	2,772	—				
25-29 "	—	1,378	2,747	4,363	—			
30-34 "	—	—	2,627	4,218	5,957			
40-44 "	—	—	—	—	5,050	7,692		
50-54 "	—	—	—	—	—	5,222	9,010	10,185
60-64 "	—	—	—	—	—	—	5,562	8,919
70-74 "	—	—	—	—	—	—	—	8,338
75 years and over	—	—	—	—	—	—	—	8,213

^a See footnote^a, Table H.2.^b Women born in Canada.

married at the same age are found in Table H.1, on the diagonals: thus women married at the age of 15 (on average) are represented by the letters *a*, *j*, *m*, . . . , etc. The precision in these ages varies, however: the possible error between actual age at marriage and the age resulting from the indicated subtraction equals the sum of the possible errors in the two elements of the subtraction. In Table H.1, the letter *a* corresponds to an age at marriage equal to 15 years (15.5 years minus 0.5 year); but, due to the lack of preciseness in the two elements of this operation, the possible error is one year more or less; that is to say that, in fact, these are women who married between the ages of 14 and 16. By using the same type of calculation, we get the possible error in the other cases:

- (1) possible error of one year (more or less) for women aged 15-39 the duration of whose marriage has been from 0-1 year at 24-25 years; this is the case for women represented by the letter *a* in the table;
- (2) possible error of 3 years (more or less) in the case of women aged 15-39 whose marriages have lasted 25 to 35 years (these are the women symbolized by the letter *f*);

- (3) possible error of 3 years (more or less) in the case of women aged 40-74 whose marriages have lasted 0 to 25 years (women represented by the letter *n*);
- (4) possible error of 5 years (more or less) in the case of women aged 40-74 and whose marriages have lasted 25 to 35 years (women represented by the letter *p*).

The remarks we have just made apply to data relative to Canada, by type of residence. In regard to other data relating to certain particular groups of women, information is not quite so detailed: the age in 1961 is given by 5-year groups for all ages as is duration of marriage from upwards of 15 years duration. But the possible error in any case is never more than 5 years, more or less. We should point out, however, that these errors largely cancel one another and that the average errors are probably very minor.

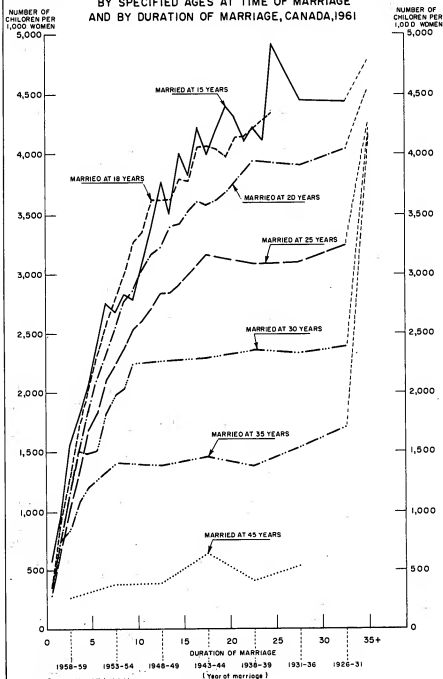
In Graph H.1 will be found the crude result of this transformation for Canada as a whole: the curves are serrated and it would seem that many of these serrations are the result of chance. We therefore felt no hesitation in making a free-hand adjustment which, in most cases, leaves little room for arbitrariness. In some instances, however, irregularities in the curves are not due to chance, but indicate true variations. We took this into account in adjusting the curves.

The results of these operations are shown in Table H.4 and Graph H.2. We selected certain ages at marriage (15, 18, 20, 25, 30, 35, 45 years), and certain durations of marriage (2.5, 5, 10, 15, 20, 25 and 30 years). In certain cases, there were so few women who married when they were over 30 that no useful information could be derived from their study. Most of the rates we have used are based on groups of married women exceeding 50 in number; in Table H.4, we indicated by an asterisk those ages at marriage in respect of which more than a quarter of the rates were based on a number of women lower than 50.

However, we must beware of interpreting these results in a faulty manner. When, in Table H.4 and Graph H.2, the duration of marriage varies, we are dealing with successive cohorts, who have lived through their fertility period at various times. What seems to be the effect of duration of marriage is at the same time the result of the transition from one generation to another. It is only in taking fresh observations of the same cohorts, some years later, that the true effect of the duration of marriage can really be measured. This is what we have done in Chapter 5, by comparing data from the 1941 Census to those of the 1961 Census. Unfortunately, the 1941 Census data were not nearly as precise as those drawn from the 1961 Census data.

GRAPH H.1

NUMBER OF LIVE-BORN CHILDREN PER 1,000 WOMEN EVER MARRIED, BY SPECIFIED AGES AT TIME OF MARRIAGE AND BY DURATION OF MARRIAGE, CANADA, 1961



**Table H.4 – Number of live-born children per 100 women ever married,
by age at marriage and by duration of marriage,
for Canada and selected sub-populations, 1961**

NOTE: The rates in this table are the result of a graphic adjustment of crude rates.

*Ages for which more than a quarter of the information was based on a number of women lesser than 50.

Population and age at marriage	Duration of marriage (in years)						
	2.5	5	10	15	20	25	30
Canada							
15 years	140	220	321	390	426	443	443
18 "	140	220	321	383	415	432	432
20 "	116	197	298	348	378	395	395
25 "	103	175	255	298	315	318	318
30 "	100	160	213	228	232	234	234
35 "	91	124	141	143	143	148	148
45 "	22	35	45	52	55	55	55
Metropolitan areas							
15 years*	130	203	272	302	323	336	341
18 "	130	203	283	320	338	350	357
20 "	103	176	263	295	305	310	313
25 "	92	160	231	255	261	252	257
30 "	90	138	187	200	195	190	198
35 "	80	108	125	118	115	125	142
45 "	18	20	25	25	22	42	—
Urban areas of 5,000 to 29,999 inhabitants							
15 years*	140	208	300	370	430	475	—
18 "	140	225	318	370	400	—	—
20 "	140	208	295	340	365	380	392
25 "	110	192	270	298	308	315	315
30 " *	110	190	240	250	245	234	226
35 " *	95	115	135	150	157	158	155
Rural non-farm							
15 years*	160	245	360	462	555	582	585
18 "	160	245	360	448	495	525	—
20 "	135	225	350	415	462	482	480
25 "	135	212	302	365	385	368	372
30 " *	160	205	268	280	279	277	275
Rural farm							
15 years*	145	250	365	425	470	514	552
18 "	145	250	365	440	490	530	572
20 "	145	250	365	425	470	505	540
25 "	122	220	337	392	425	442	460
30 " *	145	205	285	318	333	343	340
35 " *	100	150	193	204	205	208	215
Elementary schooling							
15 years	146	222	360	427	471	500	515
18 "	146	222	341	410	—	—	—
20 "	129	205	330	395	440	455	456
25 "	117	182	298	348	369	372	373
30 "	123	165	233	265	277	277	277
35 "	116	136	160	174	177	177	189
45 "	44	45	50	60	78	84	84

TRENDS AND FACTORS OF FERTILITY IN CANADA

Table H.4 – Number of live-born children per 100 women ever married,
by age at marriage and by duration of marriage,
for Canada and selected sub-populations, 1961 (Concluded)

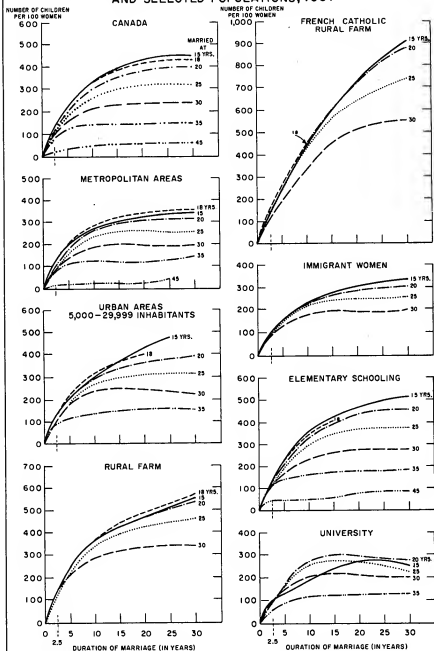
Population and age at marriage	Duration of marriage (in years)						
	2.5	5	10	15	20	25	30
Secondary schooling:							
15 years	130	207	326	345	347	352	355
18 "	130	205	300	330	—	—	—
20 "	113	180	286	310	317	322	327
25 "	97	160	252	278	275	265	268
30 "	92	140	207	215	208	203	203
University							
15 years*	100	130	190	240	270	275	250
18 "	—	—	—	—	—	—	—
20 "	90	160	270	300	293	282	273
25 "	89	159	257	277	267	248	225
30 "	92	150	210	216	211	205	201
35 "	61	90	113	120	123	125	130
Immigrant women							
15 years	100	150	228	270	303	320	334
18 "	—	—	—	—	—	—	—
20 "	94	150	225	262	282	292	305
25 "	91	145	217	240	245	247	255
30 "	91	126	175	195	190	190	200
Anglo-Protestant, urban ^a							
15 years	138	225	318	338	333	339	345
18 "	138	200	290	320	—	—	—
20 "	106	180	273	290	288	285	285
25 "	92	155	238	248	233	222	220
30 "	92	133	189	188	173	168	164
35 "	82	113	127	115	105	100	110
Anglo-Protestant, rural farm ^a							
15 years*	142	225	367	400	405	408	420
18 "	142	225	318	363	—	—	—
20 "	129	200	315	345	362	373	387
25 "	125	190	290	309	308	307	306
30 "	125	180	230	245	247	246	245
French-Catholic, urban ^b							
15 years	138	213	346	418	468	506	540
18 "	138	213	336	403	—	—	—
20 "	124	197	322	395	440	478	510
25 "	108	180	285	345	380	408	435
30 "	97	175	230	255	275	290	312
35 "	81	112	153	172	180	192	218
French-Catholic, rural farm ^b							
15 years*	131	235	435	600	725	830	910
18 "	145	258	450	—	—	—	—
20 "	145	258	450	600	718	812	879
25 "	138	235	425	560	640	692	735
30 " *	110	188	330	455	510	543	555

^aProtestant women of English mother tongue, born in Canada.

^bCatholic women of French mother tongue, born in Canada.

GRAPH H.2

NUMBER OF LIVE-BORN CHILDREN PER 100 WOMEN EVER MARRIED,
BY DURATION OF MARRIAGE, FOR SPECIFIED AGES AT TIME
OF MARRIAGE, CANADA, FOR VARIOUS TYPES OF RESIDENCE
AND SELECTED POPULATIONS, 1961



Source: Table H.4

We shall not comment on these results, but attention should be drawn to the very high fertility of the French-speaking Catholic women living in a rural farm environment, aged 50-54 in 1961 and who had been married for 35 or more years (Table H.3); all these women were married before they reached 20 years of age and they bore an average of 10.2 children.

I. REMARKS ON THE VALUE OF DATA OBTAINED FROM THE SAMPLE

At the time of the 1961 Census, a special questionnaire (Form 4) was used to collect information on income, migrations since 1956 and the fertility of women who had already been married. Two questions were put to the latter:

1. What was the date of your first marriage?
2. How many live children have you borne?

Form 4 was submitted to each fifth household, except in the following instances:

- collective-type households (hotels, prisons, convents, boarding-houses, . . ., etc.);
- households whose members were not at their usual place of residence, including those who were overseas;
- households and people who were part of a mail census.

It was estimated that these categories covered 121,100 women ever married, which represents 2.6% of the 4,614,000 women ever married enumerated by the general census. What was sought was to reach a universe of 4,493,000 women of whom 899,000 were covered by the sample and, in principle, there should have been the same number of Forms 4. In fact, about 800,000 forms were usable. The 110,000 odd forms that were missing in the sample on fertility corresponded to those cases in which there was no reply to at least one of the two questions on fertility or the cases for which no Form 4 was collected. Some Forms 4 were also discarded, even when they had been correctly completed, when they could not be related to the 2A General Census Forms.

As a whole, the missing or non-usable forms comprised 12.2% of the sample. We cannot discover to what extent the behaviour of the women involved differs from that of the women about whose fertility we do have data. There is no way of making the necessary corrections.

It is interesting to note the variations in the percentage of non-respondents, in relation to certain characteristics. It has been estimated for Canada by age and residence (Table I.1) and for each province by age (all types of residence), on the one hand, and by residence (all ages) on the other (Table I.2).

Amongst the provinces, it is in New Brunswick that the non-response is most apparent (17.1%); the percentage for the other provinces is between 9.0 and 13.7. It is amongst the age groups that the differences are most

TRENDS AND FACTORS OF FERTILITY IN CANADA

Table 1.1 – Estimation of the percentage of female non-respondents, by age group, Canada, by type of residence, 1961

Age	All types of residence	Urban	Rural non-farm	Rural farm
15-19 years	19.4	19.6	16.8	26.0
20-24 "	14.4	14.6	13.6	13.3
25-29 "	12.4	12.6	11.7	11.4
30-34 "	11.8	12.0	11.4	10.2
35-39 "	11.1	11.2	11.4	9.6
40-44 "	11.1	11.3	11.2	9.4
45-49 "	11.3	11.6	10.9	9.6
50-54 "	12.0	12.4	11.7	10.0
55-59 "	12.0	12.3	11.2	11.1
60-64 "	12.0	12.6	10.8	9.8
65 years and over	13.6	14.2	12.0	11.3
15 years and over	12.2	12.6	11.8	10.6

SOURCE: DBS, *Census of Canada, 1961*, unpublished data.

Table 1.2 – Estimation of the percentage of female non-respondents by type of residence and by age group, for the provinces,^a 1961

Residence and age	Nfld.	P.E.I.	N.S.	N.B.	Qué.	Ont.	Man.	Sask.	Alta.	B.C.
Residence										
All types of residence	10.6	10.6	12.2	17.1	13.7	12.3	9.0	9.6	10.8	10.4
Urban	12.0	11.2	12.4	14.6	13.8	13.2	9.2	9.6	10.6	9.8
Rural non-farm ...	9.2	11.6	11.8	20.8	13.2	9.3	9.1	9.4	11.2	11.9
Rural farm	8.4	8.8	12.0	14.3	13.0	8.6	8.9	10.0	11.2	11.1
Age										
15-19 years ..	17.4	20.3	17.6	23.2	23.8	18.6	17.0	18.4	16.5	16.8
20-24 "	10.3	13.8	15.6	21.0	17.0	13.6	11.4	11.8	13.0	11.8
25-29 "	10.2	16.4	12.4	19.4	14.0	12.1	9.8	10.7	10.4	10.0
30-34 "	9.3	10.2	10.8	17.8	13.2	11.8	8.6	9.8	10.0	10.0
35-39 "	9.1	13.5	10.7	16.5	12.2	11.2	8.3	9.8	10.0	9.0
40-44 "	10.5	5.7	10.8	14.9	13.2	10.9	7.2	8.8	9.6	9.3
45-49 "	9.1	8.4	10.6	14.2	12.6	11.8	8.0	9.8	9.9	9.4
50-54 "	10.6	15.8	12.8	17.8	13.8	11.8	8.6	8.2	10.6	10.1
55-59 "	10.3	5.4	10.9	17.8	13.2	12.1	8.4	8.2	12.2	10.6
60-64 "	10.6	6.6	12.4	17.4	13.4	12.3	9.2	8.6	10.6	10.0
65 years and over	14.2	9.2	13.6	15.6	14.4	14.6	10.8	9.4	12.1	12.0
15 years and over	10.6	10.6	12.2	17.1	13.7	12.3	9.0	9.6	10.8	10.4

^aIn the Yukon, the percentage is 14.4 and in the Northwest Territories, 59.6.
SOURCE: DBS, *Census of Canada, 1961*, unpublished data.

pronounced; the older and younger women (particularly those under 20 years) show much greater non-response than the middle-aged women.

These variations in the fraction of non-respondents create a distortion in the sample in relation to the population as a whole: all categories are under-represented, but certain ones are more under-represented than others. This distortion in the sample can be corrected by weighting the figures in each cell within a table, in conformity with figures for the population as a whole. This calculation can be worked out, taking into account all the characteristics about which the general census form provides details, and this is what has been done with all the census tables bearing on fertility. However, it is clear that the sample cannot be weighted in relation either to the number of live children born or to age at marriage because the general census did not supply this information. As we have already pointed out, it is impossible to correct the number of children born live to a given group of women, bearing in mind that the women who did not reply to Form 4 perhaps did not experience the same fertility level. There would have required that another enquiry be conducted amongst this latter group of women, but this was not done.

It should be noted, however, that of all the categories of women appearing in the two tables in this Appendix, if we except the Northwest Territories, at least 74% of the women replied correctly to the two questions bearing on fertility and that of all women taken as a whole, 88% replied correctly.

J. TABLES

TABLE J.1 - Birth rates, Canada and United States, 1909 to 1965
(number of births per 1,000 inhabitants)

Year	Canada ^a	U.S.A. ^b (white population)	Year	Canada ^a	U.S.A. ^b (white population)
1909.....	—	29.2	1938.....	20.7	18.4
1910.....	—	29.2	1939.....	20.6	18.0
1911.....	—	29.1	1940.....	21.6	18.6
1912.....	—	29.0	1941.....	22.4	19.5
1913.....	—	28.8	1942.....	23.5	21.5
1914.....	—	29.3	1943.....	24.2	22.1
1915.....	—	28.9	1944.....	24.0	20.5
1916.....	—	28.5	1945.....	24.3	19.7
1917.....	—	27.9	1946.....	27.2	23.6
1918.....	—	27.6	1947.....	28.9	26.1
1919.....	—	25.3	1948.....	27.3	24.0
1920.....	—	26.9	1949.....	27.3	23.6
1921.....	29.3	27.3	1950.....	27.1	23.0
1922.....	28.3	25.4	1951.....	27.2	23.9
1923.....	26.7	25.2	1952.....	27.9	24.1
1924.....	26.7	25.1	1953.....	28.1	24.0
1925.....	26.1	24.1	1954.....	28.5	24.2
1926.....	24.7	23.1	1955.....	28.2	23.8
1927.....	24.3	22.7	1956.....	28.0	24.0
1928.....	24.1	21.5	1957.....	28.2	24.0
1929.....	23.5	20.5	1958.....	27.5	23.3
1930.....	23.9	20.6	1959.....	27.4	23.1
1931.....	23.2	19.5	1960.....	26.8	22.9
1932.....	22.5	18.7	1961.....	26.1	22.4
1933.....	21.0	17.6	1962.....	25.3	21.6
1934.....	20.7	18.1	1963.....	24.6	20.9
1935.....	20.5	17.9	1964.....	23.5	20.2
1936.....	20.3	17.6	1965.....	21.4	18.5
1937.....	20.1	17.9			

^aIncludes Newfoundland. Source: DBS, *Vital Statistics, 1957*, Table 8, p. 91; 1965, Table B-1, p. 68.

^bUS Department of Health, Education and Welfare, *Vital Statistics of the United States, 1965*, Vol. 1, pp. 1-4. These rates have been corrected to take under-registration of births into account. We corrected the 1960-1965 rates ourselves by using the difference between the corrected and uncorrected rates in 1959.

**Table J.2 – Percentage of women ever married by age group,
for selected ethnic groups, Canada,
by type of residence, 1961**

Residence and ethnic origin	Age of women (in years)						
	15-19	20-24	25-34	35-44	45-54	55-64	65+
All types of residence							
British	8.9	62.8	88.7	91.9	90.5	89.3	89.3
French	6.2	51.0	82.5	86.9	85.7	85.4	86.5
Jewish	4.3	60.6	92.2	94.5	93.5	93.6	97.6
Other north-western							
European	11.3	66.7	89.7	93.0	93.6	94.1	94.5
Asiatic	8.3	60.3	82.4	89.3	94.2	96.8	98.3
Eskimo and Indian	16.2	60.9	84.3	92.6	95.7	96.3	96.8
Urban							
British	9.5	59.5	87.3	90.8	89.1	87.8	88.4
French	6.5	50.4	81.2	85.3	83.7	83.2	84.2
Jewish	4.2	60.6	92.4	96.6	93.5	93.6	97.8
Other north-western							
European	12.1	64.1	88.4	91.8	92.4	93.3	93.8
Asiatic	8.9	60.6	81.8	88.6	93.8	96.8	98.3
Eskimo and Indian	16.7	60.0	83.7	90.1	92.4	92.1	93.0
Rural non-farm							
British	13.5	76.1	93.0	94.5	93.9	93.2	92.2
French	8.2	60.5	87.1	89.8	88.6	89.8	92.0
Jewish	12.8	63.4	68.4	79.4	83.3	93.0	90.6
Other north-western							
European	14.3	78.6	92.5	94.2	94.3	95.2	95.5
Asiatic	6.6	60.6	90.0	94.5	96.5	96.1	97.7
Eskimo and Indian	16.4	61.4	84.4	93.0	96.2	97.0	97.4
Rural farm							
British	6.0	65.7	93.4	96.3	95.6	94.4	92.5
French	2.7	67.8	84.9	93.8	94.9	93.8	93.4
Jewish	14.3	14.3	88.9	88.0	91.3	93.3	100.0
Other north-western							
European	6.4	66.4	93.8	96.4	96.7	96.1	96.0
Asiatic	1.2	43.0	84.1	95.9	98.2	99.1	100.0
Eskimo and Indian	12.6	57.8	85.0	94.8	97.3	97.8	96.1

SOURCE: DBS, unpublished 1961 Census data.

Table J.3 - Number of live-born children per 1,000 women living with their husband, for selected occupations of husband, Canada, by type of residence, 1961

Husband's occupation	All types of residence	Metropolitan areas			Urban areas 30,000 - 100,000	Urban areas 5,000-30,000	Rural non-farm	Rural farm
		Total	Central city	Fringe				
A. WOMEN AGED 35-39 YEARS								
1. Managerial.....	2,859	2,398	2,192	2,508	2,945	3,052	3,386	—
2. Professional and technical.....	2,610	2,439	2,371	2,486	2,787	2,851	3,050	—
2.1 Engineers.....	2,501	2,398	2,191	2,508	2,544	2,757	—	—
2.2 Physical scientists.....	2,496	2,386	2,467	2,268	2,556	—	—	—
2.3 Professors and college principals.....	2,729	2,621	2,787	2,404	—	—	—	—
2.4 Physicians and surgeons.....	3,088	2,978	3,006	2,949	3,431	3,279	—	—
2.5 Lawyers and notaries.....	2,953	2,930	2,882	2,970	3,036	2,783	—	—
2.6 Authors, editors, and journalists.....	2,383	2,309	2,262	2,346	2,750	2,333	—	—
3. Clerical.....	2,560	2,370	2,380	2,360	2,696	2,702	3,130	—
4.1 Commercial travellers.....	2,616	2,442	2,462	2,426	2,740	2,981	3,142	—
4.2 Salesclerks.....	2,822	2,411	2,355	2,470	3,013	3,090	3,429	—
4.3 Insurance salesmen and agents.....	2,922	2,778	2,762	2,791	2,908	2,868	3,260	—
5.1 Protective services.....	2,955	2,782	2,743	2,818	3,091	2,970	3,220	—
5.2 Stewards, barmen and waiters.....	2,785	2,440	2,169	2,886	3,262	2,650	3,130	—
6.1 Farmers and stockraisers.....	4,049	—	—	—	—	—	3,701	4,087
6.2 Farm labourers.....	3,665	—	—	—	—	—	4,149	3,397
6.3 Gardeners.....	2,997	2,512	2,583	2,409	3,478	3,667	3,518	—
7. Loggers and related workers.....	5,009	—	—	—	—	—	5,208	6,230
8.1 Fishermen.....	4,533	—	—	—	—	—	4,831	4,857
9. Miners, quarrymen and related workers.....	3,771	3,004	2,645	3,539	3,139	3,912	4,067	—
10. Craftsmen.....	3,113	2,658	2,540	2,780	3,065	3,318	3,853	—
10.1 Textile workers.....	3,453	2,647	2,000	3,279	3,620	3,478	4,238	—
11. Labourers.....	3,589	2,849	2,606	3,248	3,260	3,939	4,588	—
All occupations.....	2,764	2,525	2,453	2,575	2,878	2,980	3,294	3,753

B. WOMEN AGED 45-49 YEARS

1.	Managerial	2,576	2,238	2,255	2,221	2,671	2,737	3,086	—
2.	Professional and technical	2,396	2,246	2,223	2,268	2,458	2,614	2,737	—
2.1	Engineers	2,251	2,194	2,255	2,157	2,257	2,450	—	—
2.2	Physical scientists	2,371	2,356	2,368	2,343	2,929	—	—	—
2.3	Professors and college principals	2,596	2,569	2,515	2,625	—	—	—	—
2.4	Physicians and surgeons	2,646	2,536	2,220	2,931	2,395	—	—	—
2.5	Lawyers and notaries	2,874	2,667	2,830	2,488	3,476	3,429	—	—
2.6	Authors, editors, and journalists	1,985	1,845	1,717	2,000	1,933	3,167	—	—
3.	Clerical	2,374	2,182	2,113	2,268	2,551	2,600	3,007	—
4.1	Commercial travellers	2,272	2,115	2,058	2,165	2,287	2,582	3,114	—
4.2	Salesclerks	2,428	2,205	2,272	2,106	2,919	2,161	2,835	—
4.3	Insurance salesmen and agents ..	2,693	2,456	2,554	2,340	2,690	3,027	2,297	—
5.1	Protective services	3,007	2,614	2,567	2,682	3,098	3,350	3,612	—
5.2	Stewards, barmen and waiters	2,475	2,097	2,112	2,075	3,389	3,074	3,423	—
6.1	Farmers and stockraisers	4,373	—	—	—	—	—	3,288	4,451
6.2	Farm labourers	4,130	—	—	—	—	—	4,556	3,787
6.3	Gardeners	3,257	3,180	3,109	3,288	3,111	3,600	3,300	—
7.	Loggers and related workers	5,782	—	—	—	—	—	5,877	7,487
8.1	Fishermen	4,755	—	—	—	—	—	4,918	5,237
9.	Miners, quarrymen and related workers	4,153	3,293	3,092	3,674	3,533	4,324	4,098	—
10.	Craftsmen	3,169	2,613	2,518	2,721	3,233	3,442	3,910	—
10.1	Textile workers	3,481	2,828	2,355	3,273	3,818	3,446	3,222	—
11.	Labourers	3,904	3,098	3,010	3,252	3,518	4,282	4,807	—
	All occupations	2,523	2,240	2,244	2,236	2,599	2,703	3,015	4,249

SOURCE: DBS, unpublished 1961 Census data.

Table J.4 – Number of live-barn children per 1,000 women living with their husband, by schooling of wife and husband, and by annual income of husband, Canada, selected areas, 1961

NOTE: All instances involving fewer than 50 couples were left aside.

No.	Wife's schooling	Husband's schooling	All types of residence			
			Husband's annual income (in thousand dollars)			
			<1	1-3	3-5	5-7
			A. WOMEN AGED 25-29 YEARS IN 1961			
1	Elementary	Elementary	2,597	2,527	2,477	2,694
2	"	Secondary	—	2,255	2,227	2,463
3	"	Some university	—	—	—	—
4	"	University degree	—	—	—	—
5	"	All levels	2,514	2,471	2,389	2,558
6	Secondary	Elementary	—	2,380	2,354	2,517
7	"	Secondary	—	1,893	1,888	2,109
8	"	Some university	—	—	1,593	1,897
9	"	University degree	—	—	—	1,560
10	"	All levels	1,907	2,065	1,988	2,108
11	Some university	Elementary	—	—	—	—
12	"	Secondary	—	—	—	—
13	"	Some university	—	—	—	—
14	"	University degree	—	—	—	—
15	"	All levels	—	—	1,496	1,597
16	University degree	Elementary	—	—	—	—
17	"	Secondary	—	—	—	—
18	"	Some university	—	—	—	—
19	"	University degree	—	—	—	—
20	"	All levels	—	—	—	—
21	All levels	Elementary	2,540	2,478	2,420	2,591
22	"	Secondary	1,875	1,985	1,945	2,135
23	"	Some university	—	—	1,552	1,848
24	"	University degree	—	—	1,263	1,472
25	"	All levels	2,209	2,261	2,105	2,141
			B. WOMEN AGED 35-39 YEARS IN 1961			
26	Elementary	Elementary	4,054	3,873	3,576	3,746
27	"	Secondary	—	3,160	3,077	3,221
28	"	Some university	—	—	—	—
29	"	University degree	—	—	—	—
30	"	All levels	3,917	3,752	3,428	3,496
31	Secondary	Elementary	—	3,096	3,062	3,135
32	"	Secondary	—	2,527	2,532	2,732
33	"	Some university	—	—	2,199	2,662
34	"	University degree	—	—	—	2,450
35	"	All levels	2,829	2,766	2,682	2,782

Table J.4 – Number of live-born children per 1,000 women living with their husband, by schooling of wife and husband, and by annual income of husband, Canada, selected areas, 1961

NOTE: All instances involving fewer than 50 couples were left aside.

All types of residence			Metropolitan areas							
Husband's annual income (in thousand dollars)										
7-10	10+	All incomes	<1	1-3	3-5	5-7	7-10	10+	All incomes	No.
A. WOMEN AGED 25-29 YEARS IN 1961										
—	—	2,583	—	1,897	2,102	2,395	—	—	2,078	1
—	—	2,319	—	1,886	2,023	2,296	—	—	2,072	2
—	—	—	—	—	—	—	—	—	—	3
—	—	—	—	—	—	—	—	—	—	4
—	—	2,498	—	1,891	2,070	2,316	—	—	2,069	5
—	—	2,427	—	2,074	2,079	2,258	—	—	2,125	6
2,192	—	2,005	—	1,552	1,713	1,947	2,055	—	1,807	7
—	—	1,774	—	—	—	1,761	—	—	1,604	8
1,871	—	1,651	—	—	—	1,444	1,776	—	1,558	9
2,123	2,245	2,078	—	1,664	1,771	1,924	1,976	2,134	1,833	10
—	—	—	—	—	—	—	—	—	—	11
—	—	1,578	—	—	—	—	—	—	1,414	12
—	—	—	—	—	—	—	—	—	—	13
—	—	1,633	—	—	—	—	—	—	—	14
—	—	1,630	—	—	—	—	—	—	1,502	15
—	—	—	—	—	—	—	—	—	—	16
—	—	—	—	—	—	—	—	—	—	17
—	—	—	—	—	—	—	—	—	—	18
—	—	1,343	—	—	—	—	—	—	1,299	19
—	—	1,338	—	—	—	—	—	—	1,272	20
—	—	2,515	—	1,938	2,090	2,315	—	—	2,092	21
2,198	2,293	2,047	—	1,634	1,764	1,972	2,050	—	1,839	22
—	—	1,732	—	—	1,378	1,708	—	—	1,576	23
1,794	2,014	1,583	—	—	—	1,354	1,720	—	1,502	24
2,100	2,206	2,186	—	1,765	1,855	1,941	1,951	2,076	1,876	25
B. WOMEN AGED 35-39 YEARS IN 1961										
3,814	—	3,902	—	2,773	2,945	3,132	—	—	2,959	26
3,207	—	3,201	—	—	2,769	2,931	—	—	2,798	27
—	—	—	—	—	—	—	—	—	—	28
—	—	—	—	—	—	—	—	—	—	29
3,470	3,593	3,702	—	2,717	2,886	3,010	3,140	—	2,898	30
—	—	3,184	—	2,470	2,686	2,816	—	—	2,712	31
2,736	2,878	2,702	—	2,178	2,301	2,563	2,582	2,778	2,462	32
2,667	—	2,592	—	—	—	2,462	—	—	2,391	33
2,604	2,931	2,664	—	—	—	—	2,522	2,830	2,551	34
2,725	2,900	2,813	—	2,265	2,385	2,577	2,573	2,797	2,510	35

TRENDS AND FACTORS OF FERTILITY IN CANADA

Table J.4 – Number of live-born children per 1,000 women living with their husband, by schooling of wife and husband, and by annual income of husband, Canada, selected areas, 1961 – Concluded

No.	Wife's schooling	Husband's schooling	All types of residence			
			Husband's annual income (in thousand dollars)			
			<1	1-3	3-5	5-7
B. WOMEN AGED 35-39 YEARS IN 1961 (Concluded)						
1	Some university	Elementary	—	—	—	—
2	" "	Secondary	—	—	—	—
3	" "	Some university	—	—	—	—
4	" "	University degree	—	—	—	—
5	" "	All levels	—	—	2,323	2,410
6	University degree	Elementary	—	—	—	—
7	" "	Secondary	—	—	—	—
8	" "	Some university	—	—	—	—
9	" "	University degree	—	—	—	—
10	" "	All levels	—	—	—	—
11	All levels	Elementary	3,799	3,668	3,395	3,466
12	" "	Secondary	2,864	2,718	2,663	2,806
13	" "	Some university	—	—	2,306	2,619
14	" "	University degree	—	—	—	2,370
15	" "	All levels	3,441	3,353	3,003	2,946
C. WOMEN AGED 45-49 YEARS IN 1961						
16	Elementary	Elementary	4,527	4,180	3,640	3,677
17	" "	Secondary	—	3,029	3,002	2,948
18	" "	Some university	—	—	—	—
19	" "	University degree	—	—	—	—
20	" "	All levels	4,386	3,994	3,470	3,369
21	Secondary	Elementary	—	3,098	2,886	2,872
22	" "	Secondary	—	2,468	2,355	2,391
23	" "	Some university	—	—	—	—
24	" "	University degree	—	—	—	—
25	" "	All levels	3,015	2,751	2,537	2,490
26	Some university	Elementary	—	—	—	—
27	" "	Secondary	—	—	—	—
28	" "	Some university	—	—	—	—
29	" "	University degree	—	—	—	—
30	" "	All levels	—	—	—	—
31	University degree	Elementary	—	—	—	—
32	" "	Secondary	—	—	—	—
33	" "	Some university	—	—	—	—
34	" "	University degree	—	—	—	—
35	" "	All levels	—	—	—	—
36	All levels	Elementary	4,199	3,878	3,376	3,306
37	" "	Secondary	2,939	2,636	2,528	2,482
38	" "	Some university	—	—	2,212	2,368
39	" "	University degree	—	—	—	—
40	" "	All levels	3,841	3,478	2,971	2,736

SOURCE: DBS, 1961 Census, unpublished data.

Table J.4 – Number of live-born children per 1,000 women living with their husband, by schooling of wife and husband, and by annual income of husband, Canada, selected areas, 1961 – Concluded

All types of residence			Metropolitan areas							No.
Husband's annual income (in thousand dollars)										
7-10	10+	All incomes	<1	1-3	3-5	5-7	7-10	10+	All incomes	
B. WOMEN AGED 35-39 YEARS IN 1961 (Concluded)										
—	—	—	—	—	—	—	—	—	—	1
—	—	2,544	—	—	—	—	—	—	2,247	2
—	—	2,423	—	—	—	—	—	—	—	3
—	—	2,767	—	—	—	—	—	—	2,616	4
2,682	2,979	2,620	—	—	—	—	—	—	2,380	5
—	—	—	—	—	—	—	—	—	—	6
—	—	—	—	—	—	—	—	—	—	7
—	—	—	—	—	—	—	—	—	—	8
—	3,000	2,696	—	—	—	—	—	—	2,572	9
—	2,927	2,550	—	—	—	—	—	—	2,433	10
3,448	—	3,651	—	2,689	2,858	2,982	—	—	2,869	11
2,782	2,913	2,799	—	2,266	2,402	2,610	2,622	2,766	2,517	12
2,698	—	2,604	—	—	—	2,377	2,573	—	2,382	13
2,618	2,971	2,684	—	—	—	2,149	2,499	2,887	2,561	14
2,814	2,983	3,142	2,634	2,506	2,587	2,655	2,630	2,822	2,627	15
C. WOMEN AGED 45-49 YEARS IN 1961 (Concluded)										
—	—	4,191	—	3,065	3,017	2,907	—	—	3,049	16
—	—	3,082	—	—	2,651	2,584	—	—	2,609	17
—	—	—	—	—	—	—	—	—	—	18
—	—	—	—	—	—	—	—	—	—	19
3,221	3,305	3,919	3,613	2,939	2,909	2,758	2,645	—	2,910	20
—	—	3,104	—	2,391	2,455	2,426	—	—	2,448	21
2,320	2,294	2,442	—	2,114	2,093	2,248	2,153	2,193	2,162	22
—	—	2,360	—	—	—	—	—	—	2,194	23
2,212	2,475	2,343	—	—	—	—	—	2,422	2,246	24
2,362	2,399	2,643	—	2,199	2,202	2,276	2,184	2,272	2,237	25
—	—	—	—	—	—	—	—	—	—	26
—	—	2,238	—	—	—	—	—	—	—	27
—	—	—	—	—	—	—	—	—	—	28
—	—	—	—	—	—	—	—	—	—	29
—	—	2,282	—	—	—	—	—	—	2,089	30
—	—	—	—	—	—	—	—	—	—	31
—	—	—	—	—	—	—	—	—	—	32
—	—	—	—	—	—	—	—	—	—	33
—	—	2,382	—	—	—	—	—	—	—	34
—	—	2,247	—	—	—	—	—	—	2,149	35
3,201	3,180	3,809	3,482	2,888	2,825	2,682	2,666	—	2,836	36
2,380	2,349	2,579	—	2,182	2,246	2,293	2,191	2,216	2,250	37
—	—	2,361	—	—	—	—	—	—	2,192	38
2,257	2,476	2,367	—	—	—	—	2,202	2,436	2,298	39
2,503	2,506	3,173	3,118	2,607	2,529	2,398	2,268	2,327	2,481	40

TRENDS AND FACTORS OF FERTILITY IN CANADA

Table J.5 – Number of live-born children per 1,000 women living with their husband, by annual income of husband, and by selected levels of schooling of spouses, women aged 25–29, 35–39, and 45–49, Canada, for various cultural groups, 1961

NOTE: All cases involving fewer than 50 couples were left aside.

Age of woman	Population	Husband's annual income (in thousand dollars)					
		<1	1-3	3-5	5-7	7-10	10 +
WIFE: SECONDARY SCHOOLING - HUSBAND: SECONDARY SCHOOLING							
25-29 years	Canada	1,780	1,893	1,888	2,109	2,192	2,297
	Immigrant	1,382	1,426	1,445	1,664	1,676	1,836
	Anglo-Protestant	1,866	2,092	1,966	2,136	2,238	2,360
	Anglo-Catholic	2,064	2,168	2,235	2,380	2,507	2,644
	French-Catholic	1,814	1,794	1,837	2,169	2,239	2,247
35-39 years	Canada	2,775	2,527	2,532	2,732	2,736	2,878
	Immigrant	1,868	2,170	2,202	2,516	2,517	2,643
	Anglo-Protestant	2,864	2,500	2,473	2,581	2,617	2,645
	Anglo-Catholic	-	2,992	3,108	3,297	3,172	3,620
	French-Catholic	3,217	2,835	2,901	3,219	3,236	3,480
45-49 years	Canada	2,728	2,468	2,355	2,391	2,320	2,294
	Immigrant	2,671	2,176	2,087	2,154	2,239	2,050
	Anglo-Protestant	2,240	2,310	2,191	2,134	2,016	2,036
	Anglo-Catholic	3,885	3,356	2,836	2,931	3,032	2,917
	French-Catholic	3,412	2,762	2,985	3,384	3,482	3,440
WIFE: SECONDARY SCHOOLING - HUSBAND: UNIVERSITY DEGREE							
25-29 years	Canada	-	1,060	1,306	1,560	1,871	2,041
	Immigrant	-	-	1,112	1,436	1,500	2,015
	Anglo-Protestant	-	1,019	1,356	1,516	1,894	2,076
	Anglo-Catholic	-	-	-	-	-	-
	French-Catholic	-	-	1,370	1,652	1,880	2,132
35-39 years	Canada	-	1,685	2,316	2,450	2,604	2,931
	Immigrant	-	-	1,963	2,310	2,270	2,713
	Anglo-Protestant	-	1,857	2,747	2,356	2,545	2,828
	Anglo-Catholic	-	-	-	2,738	3,133	3,547
	French-Catholic	-	-	-	2,736	2,994	3,284
45-49 years	Canada	-	1,673	2,135	2,276	2,212	2,475
	Immigrant	-	-	1,657	1,857	1,816	2,271
	Anglo-Protestant	-	-	2,128	2,186	2,017	2,244
	Anglo-Catholic	-	-	-	-	-	-
	French-Catholic	-	-	-	2,945	2,848	3,215

SOURCE: DBS, unpublished 1961 Census data.

Table J.6 – Number of live-born children per 1,000 women living with their husband, by schooling of wife, for selected income groups and occupations of husband, women aged 35-39 and 45-49, Canada, 1961

Occupation of husband	Husband's annual income (in thousand dollars)	Elementary	Secondary	Some university	University degree
35-39 YEARS					
Professional and technical	7-10	2,803	2,588	2,760	2,437
	10+	3,209	2,960	3,025	2,953
Clerical	5-7	3,169	2,712	2,585	2,071
	7-10	3,000	2,721	3,500	3,200
Craftsmen	3-5	3,342	2,731	2,493	1,773
	5-7	3,522	2,844	2,479	1,947
Labourers	1-3	3,888	3,120	—	—
	3-5	3,534	3,036	—	—
Farmers and stockraisers	3-5	3,792	3,000	—	—
	5-7	4,143	3,000	—	—
Loggers	3-5	5,440	3,547	—	—
	5-7	4,558	3,500	—	—
Fishermen	1-3	4,879	4,000	—	—
	3-5	5,800	4,167	—	—
45-49 YEARS					
Professional and technical	7-10	2,200	2,289	2,476	2,140
	10+	2,600	2,502	2,462	2,527
Clerical	5-7	2,841	2,344	2,070	2,222
	7-10	3,214	2,394	1,546	2,500
Craftsmen	3-5	3,478	2,679	2,000	1,720
	5-7	3,417	2,604	2,347	1,833
Labourers	1-3	4,399	3,128	—	—
	3-5	3,731	2,895	—	—
Farmers and stockraisers	3-5	4,333	2,917	—	—
	5-7	4,308	2,750	—	—
Loggers	3-5	5,211	3,696	—	—
	5-7	4,000	3,063	—	—
Fishermen	1-3	5,476	4,128	—	—
	3-5	4,684	4,150	—	—

SOURCE: DBS, unpublished 1961 Census data.

TRENDS AND FACTORS OF FERTILITY IN CANADA

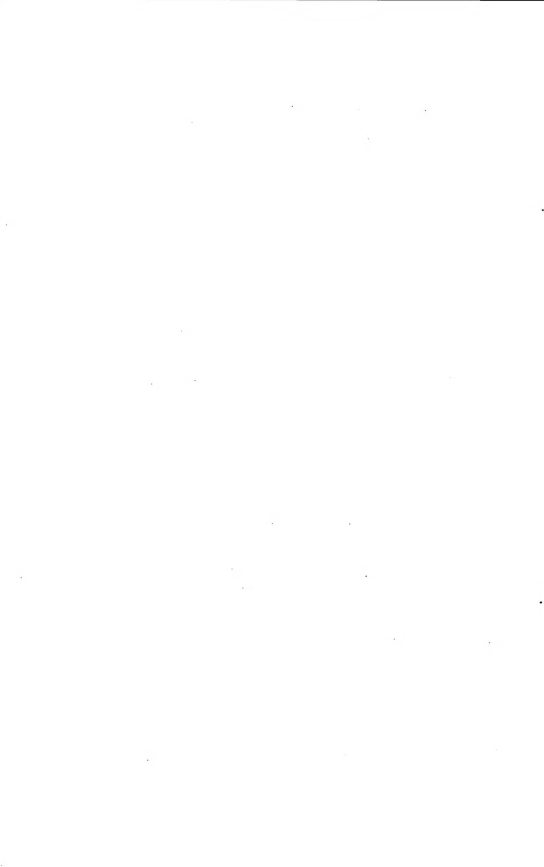
Table J.7 – Number of live-born children per 1,000 women living with their husband, by annual income and for selected occupations of husband, women aged 25–29, 35–39, and 45–49, Canada, selected areas, 1961

Type of residence and husband's occupation	Husband's annual income (in thousand dollars)				
	1-3	3-5	5-7	7-10	10+
WOMEN AGED 25-29 YEARS IN 1961					
Metropolitan areas					
Professional and technical	1,084	1,334	1,481	1,760	1,954
Engineers	1,136	1,220	1,282	1,798	1,830
Physical scientists	—	1,292	1,419	1,640	2,214
Physicians and surgeons	1,151	1,305	1,591	1,429	2,137
Authors and journalists	—	1,222	1,569	1,691	1,909
Clerical	1,377	1,603	1,864	2,017	3,000
Commercial travellers	1,383	1,685	1,763	1,760	2,052
Salesclerks	1,570	1,773	1,960	2,150	1,667
Craftsmen	1,711	1,910	2,078	2,261	2,175
Labourers	1,841	2,027	2,461	—	—
Rural non-farm					
Farmers and stockraisers	2,753	2,514	2,333	2,750	2,600
Loggers	3,548	3,236	3,289	—	—
Fishermen	3,592	3,558	2,500	—	—
WOMEN AGED 35-39 YEARS IN 1961					
Metropolitan areas					
Professional and technical	2,037	2,294	2,277	2,455	2,867
Engineers	—	1,750	2,071	2,368	2,814
Physical scientists	—	—	2,320	2,309	2,700
Physicians and surgeons	2,143	2,231	2,231	2,767	3,134
Authors and journalists	—	1,462	2,128	2,589	2,500
Clerical	1,925	2,244	2,636	2,777	3,368
Commercial travellers	2,209	2,275	2,428	2,511	2,858
Salesclerks	1,891	2,366	2,660	2,580	2,800
Craftsmen	2,520	2,600	2,751	2,889	2,817
Labourers	2,698	2,889	3,025	3,909	2,714
Rural non-farm					
Farmers and stockraisers	3,868	3,542	4,000	3,333	3,385
Loggers	5,474	5,190	4,261	3,889	4,250
Fishermen	—	2,235	1,250	—	—

Table J.7 – Number of live-born children per 1,000 women living with their husband, by annual income and for selected occupations of husband, women aged 25–29, 35–39, and 45–49, Canada, selected areas, 1961 (Concluded)

Type of residence and husband's occupation	Husband's annual income (in thousand dollars)				
	1 - 3	3 - 5	5 - 7	7 - 10	10 +
WOMEN AGED 45-49 YEARS IN 1961					
Metropolitan areas					
Professional and technical	1,922	2,173	2,142	2,241	2,424
Engineers	1,167	1,824	2,214	2,238	2,239
Physical scientists	—	2,400	2,286	2,286	2,440
Physicians and surgeons	—	—	2,333	2,400	2,610
Authors and journalists	1,750	1,727	2,000	1,645	2,000
Clerical	1,968	2,153	2,269	2,376	3,240
Commercial travellers	1,622	2,119	2,050	2,333	2,207
Salesclerks	2,101	2,231	2,042	2,656	1,875
Craftsmen	2,751	2,624	2,548	2,281	2,398
Labourers	3,101	3,056	3,115	3,067	—
Rural non-farm					
Farmers and stockraisers	3,179	3,395	3,429	3,500	3,667
Loggers	6,625	4,524	4,385	—	—
Fishermen	5,043	5,367	4,273	—	—

SOURCE: DBS, unpublished 1961 Census data.



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OTTAWA, CANADA**

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